NEW ORIENTAL AND AUSTRALIAN ICHNEUMONIDÆ

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ONE PLATE AND EIGHT TEXT FIGURES

This paper is based largely on specimens received from Prof. C. F. Baker, of the University of the Philippines, together with some from other sources. Most of the new species are from the Philippine Islands, though some few are from other islands, and still others from the Malay Peninsula.

So many genera have been described from the two regions involved, without synoptic keys for distinguishing them, that it is only with the greatest difficulty that species from these regions can be referred to their proper genera. I have found this especially true with the Joppinæ that I have studied. When members of described genera have been located in the material studied, I have constructed synoptic keys to all the species known from the two regions involved.

All of the text figures have been drawn by me, while the plate is from a photograph by Herbert S. Barber, of the Bureau of Entomology.

Genus **ACANTHOJOPPA** Cameron

Fifteen species of this genus have been described by Cameron, all from India and Borneo and mostly from single specimens, while, as Morley[1] has indicated, *Cryptus praepes* Bingham from the Philippine Islands also belongs here. Morley tabulated thirteen of Cameron's species, omitting *nigrinerva* and *cincticornis,* the latter described in *Anisobas* and later[2] referred by its author to the present genus. Morley suggests that *Acanthojoppa* and *Xanthojoppa* Cameron are perhaps not distinct though easily separated by the strong and complete propodeal carinæ in the former and their lack in the latter. He forthwith includes in the present genus two species, *lutea* and *curtispina,* which he says lack definite areas. However this may be, there is considerable variation in the distinctness of the areolation due to depth of sculpture, and one of the species described below has some of the carinæ practically obliterated. Morley also expressed doubt of the stability of the Cameronian species. In this he may be correct, but it seems hardly possible that individuals differing so markedly as do the ones before me can represent fewer species than listed. These include ten specimens from the Philippine Islands, eight collected by C. F. Baker and two by C. R. Jones. These apparently represent six species, none of which agrees with any of Cameron's descriptions; one, however, is apparently *A. praepes* (Bingham). Not all will agree with the original description of the genus, which is to be expected since the genus was based on a single species, and many purely specific characters were mentioned in the generic description. They fall, however, into three rather distinct groups, worthy perhaps of subgeneric rank.

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[1] Rev. Ichn. Brit. Mus., pt. 4 (1915) 90, footnote.

[2] Journ. St. Br. Roy. Asiat. Soc. 44 (1905) 158.

The following key will serve to separate the six species known from the Philippine Islands:

Key to the Philippine species of Acanthojoppa.

1. Propodeum with distinct apophyses; scutellum convex to pyramidal; pleura and propodeum sculptured; metapleurum not distinctly divided by a carina extending from middle to hind coxæ........ 2.
   Propodeum without distinct apophyses; scutellum flat or weakly convex; pleura and propodeum polished; metapleurum divided by a sharp carina extending from middle to hind coxæ........ 5.
2. Scutellum pyramidal and deeply emarginate at summit, nervulus postfurcal; malar space subequal to basal width of mandible; cheeks nearly flat; clypeus flat, not or barely separated; head not contrastingly colored........ 3.
   Scutellum convex, not emarginate at summit; nervulus interstitial; malar space much shorter than basal width of mandible; cheeks strongly convex; clypeus elevated at base and distinctly separated; head contrastingly colored with yellow and ferruginous. **A. praepes (Bingham).**
3. Flagellum largely black with a distinct white annulus........ 4.
   Flagellum testaceous at base, black at tip........ **A. mindanao sp. nov.**
4. Vertex sunken below level of top of eyes; areola strongly longitudinally rugose, open behind; apophyses distinctly behind middle of propodeum. **A. major sp. nov.**
   Vertex about level with top of eyes; areola closed behind, not strongly rugose; apophyses nearly at middle of propodeum. **A. annulicornis sp. nov.**
5. Hind tibia mostly fuscous, the tarsus yellow; areola longer than broad. **A. polita sp. nov.**
   Hind tibia and tarsus nearly uniform pale ferruginous. **A. mutica sp. nov.**

Acanthojoppa major sp. nov.

Female.—Length, 16 millimeters; antennæ, 13. Head subopaque punctate; temples convexly sloping, not nearly as wide as eyes; frons deeply concave with a slight median elevation, the antennal scrobes highly polished below; vertex medially distinctly below level of top of eyes, strongly sloping behind to occipital carina; occiput moderately concave; eyes large, bulging, divergent below, hardly longer than their distance apart below; face nearly flat, rather densely punctate, with a ridge on each side on the inner orbit, which extends obsoletely to the lateral angle of the clypeus, bordered dorsally by a curved ridge that unites at each side with the orbital ridge and extends dorsally as a fine carina nearly to top of eye; clypeus nearly flat, slightly elevated at base medially, at apex broadly rounded with a very inconspicuous median truncature, punctate at base, polished at apex; labrum subangulately rounded at apex; malar space as long as basal width of mandible; cheeks in front view nearly straight; scape distinctly elongate, flagellum rather stout, its basal joint little more than three times as long as thick at apex. Thorax densely punctate, the mesoscutum and scutellum very finely punctate, the pleura coarsely subrugulosely so; notauli obsoletely impressed to middle of mesoscutum; scutellum pyramidal, sinuately tapering toward summit, which is deeply emarginate, its sides densely punctate; propodeum rugose-punctate, basal areas polished, spiracular area open behind, apical transverse carina largely obliterated by coarse sculpture, areola nearly a regular hexagon, open behind, apophyses long and stout and situated distinctly behind middle; legs slender, hind femur reaching nearly to apex of abdomen; longer hind calcarium reaching distinctly beyond middle of basitarsus; basal vein curved; nervulus postfurcal; radius originating at middle of stigma; areolet very narrowly sessile, practically quadrilateral; first brachial cell short and much wider at apex than at base, the basal abscissæ of discoideus and brachius being strongly divergent and the second and third abscissæ of discoideus combined nearly as long as first; intercubitella little more than a third as long as basal abscissa of radiella. Abdomen minutely punctate, opaque; petiole distinctly compressed; postpetiole polished, four times as wide at apex as petiole, sides beyond spiracles divergent; second tergite wider at apex than long, gastrocœli distinct, rather broad, shallow. The area cephalad of each one longitudinally striate; third tergite nearly twice as wide at base as long; ovipositor strongly exserted.

Ferruginous; face, mandibles at base, scutella, and front and middle legs at base paler; abdomen, especially at apex, and mesoscutum slightly darker; flagellum fuscous with an incomplete whitish annulus on joints 6 to 13; legs, except apices of tarsi, testaceous; wings yellow stained; ovipositor sheath fuscous at apex.

Type locality.—Los Baños, Luzon, Philippine Islands.

Type.—Catalogue No. 24035, United States National Museum.

One female collected by C. F. Baker.

Acanthojoppa annulicornis sp. nov.

Closely related to *A. major* sp. nov. and differing from the preceding description of that species as follows:

Female.—Length, 14 millimeters; antennæ, 11. Head polished, mostly impunctate; vertex and top of eyes at about same level; vertex more rounded behind ocelli; occiput rather deeply concave; face with a slight median elevation but without the lateral ridge, sparsely punctate; clypeus hardly elevated at base but separated from face by a fine impressed line, polished throughout with scattered punctures at base, strongly rounded at apex; malar space slightly shorter than basal width of mandible; cheeks in front view distinctly convex. Thorax opaque; pronotum polished, striate along posterior margin and punctate above; mesoscutum densely, finely punctate; scutellum densely punctate above, sparsely so and polished laterally, its sides straight, parallel; mesopleurum obliquely striate-punctate; metapleurum densely punctate; propodeum transversely striate behind, polished and punctate basally; areola separated, the apical transverse carina distinct throughout; apophyses slenderer and situated very nearly at middle; areolet rather broadly sessile; brachial cell not quite so broad relatively at apex. Petiole not compressed; postpetiole three times as wide at apex as petiole, its sides only slightly divergent; second tergite narrower at apex than long, otherwise much as in *A. major;* third tergite fully two-thirds as long as wide.

Ferruginous; head in front and behind eyes, mandibles, pronotum anteriorly and ventrally yellowish, legs as in *A. major* except that hind tibia, except base, and basal two-thirds of basitarsus are fuscous; wings and abdomen as in *A. major.*

Type locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24036, United States National Museum.

One specimen collected by C. F. Baker and one without definite locality collected by C. R. Jones and labeled "Acc. No. 771, Bur. Agr., P. I."

Acanthojoppa mindanao sp. nov.

Immediately distinguishable from the two preceding species by its smaller size and by the lack of the white antennal annulus.

Female.—Length, 12 millimeters; antennæ, 9. Differing from the preceding description of *A. major* sp. nov. as follows: Head polished, practically impunctate above and behind; vertex medially about as high as eyes, convexly sloping behind; occiput rather deeply concave; face with punctures rather dense but shallow, without orbital ridges; clypeus more sparsely punctate at base and more strongly rounded at apex; malar space distinctly shorter than basal width of mandible; cheeks in front view rather strongly convex; scape little longer than thick. Thorax and propodeum sculptured about as in *A. annulicornis* sp nov., but with metapleurum rather distinctly obliquely rugulose; notauli very weak, scutellum tapering toward summit, its lateral margins straight; areola distinctly longer than broad, closed behind, the apical transverse carina strong; apophyses slender, scarcely behind middle; areolet pentagonal, the radial side short; brachial cell with its long sides less strongly divergent, apical two abscissæ of discoideus together much shorter than first; intercubitella barely a third as long as basal abscissa of radiella. Petiole very weakly compressed; postpetiole scarcely three times as wide at apex as petiole, scarcely wider than at spiracles, its sides convex; second tergite hardly as wide at apex as long, gastrocœli not impressed, defined only by difference in sculpture, third tergite distinctly more than half as long as wide at base.

Color as in *A. major,* except that antennæ lack the white annulus, being ferruginous with the apical two-fifths fuscous, and the abdomen is uniformly darker than thorax.

Type locality.—Zamboanga, Mindanao, Philippine Islands.

Other locality.—Davao, Mindanao, Philippine Islands.

Type.—Catalogue No. 24037, United States National Museum.

Two females received from C. F. Baker.

(Cryptus) Acanthojoppa praepes (Bingham).

Cryptus praepes BINGHAM, Ann. & Mag. Nat. Hist. VI **16** (1895) 443.
Microcryptus praepes ASHMEAD, Proc. U. S. Nat. Mus. **28** (1905) 155.
Acanthojoppa praepes MORLEY, Rev. Ich. Brit. Mus., pt. 4 (1915) 19, footnote.

Three specimens are at hand, two from Prof. C. F. Baker taken at Mount Maquiling, Luzon, and Butuan, Mindanao, and the third collected by C. R. Jones and labeled "Acc. No. 752, Bur. Agr., P. I." All agree so well with Bingham's description that there can be little doubt of the correctness of the determination. Slight variations exist in the height of the scutellar carinæ and the strength of the sculpture.

This species differs from the three preceding species in having the face and pleura striate rather than punctate, the striæ on the face being arcuate and those on the pleura oblique; the clypeus strongly elevated at base and distinctly separated; the malar space much shorter than the basal width of the mandibles; the scutellum convex but not emarginate at the summit; the nervulus interstitial; and in its much smaller size. From the two following species it differs in the convex scutellum; strong propodeal apophyses; distinctly sculptured and subopaque face, pleura, and propodeum; contrastingly colored head; separated clypeus; and almost petiolate areolet.

Acanthojoppa polita sp. nov.

This and the following species differ from all those described above in having the propodeal apophyses obsolete and the pleura and propodeum polished.

Female.—Length, 14 millimeters; antennæ, 11. Head polished throughout except that face is medially arcuately striate above; clypeus polished, strongly elevated at base, the elevation continuous with the median elevation of the face, foveæ very deep, apex broadly rounded, medially subtruncate; labrum exserted; malar space much shorter than basal width of mandible; cheeks in front view straight; vertex impressed below top of eyes, sharply declivous behind; occiput rather deeply concave; eyes large and prominent. Mesoscutum and scutellum opaque; thorax otherwise polished, practically without sculpture, although the propodeum is obsoletely transversely rugulose; notauli sharply defined to middle of mesoscutum; scutellum flat above, the carinæ becoming gradually weaker toward apex, which is subtruncate; lower portion of metapleurum separated off by a sharp arcuate carina between middle and hind coxæ (in the four preceding species this carina is visible only anteriorly); median areas of propodeum narrow, the areola much longer than wide, long horseshoe-shaped and far removed from base of propodeum, lateral abscissæ of apical carina far behind middle abscissa; areolet rather broadly sessile; nervulus antefurcal; first brachial cell nearly parallel-sided and about twice as long as wide. Abdomen opaque, narrow; first tergite stout, polished, petiole nearly half as wide as postpetiole; second tergite nearly twice as long as wide at base; third and fourth nearly quadrate; ovipositor very briefly exserted; epipleura of middle tergites broad.

Dark ferruginous; face and clypeus yellowish; antennæ black, ferruginous at base and with an incomplete white annulus embracing flagellar joints 8 to 14; wings yellowish hyaline, venation ferruginous; hind tibia except at base black; hind tarsus white, its basal joint fuscous at extreme base, apical joint ferruginous.

Type locality.—Los Baños, Luzon, Philippine Islands.

Type.—Catalogue No. 24038, United States National Museum. One female received from C. F. Baker.

Acanthojoppa mutica sp. nov.

Male.—Length, 9 millimeters; antennæ, 9. Agrees with *A. polita* sp. nov. in lacking the propodeal apophyses, the low scutellum, and the polished pleura and propodeum, but differs as follows: Face medially punctate, raised laterally above the outer corners of the clypeus; clypeus nearly flat with deep foveæ, apex truncate and with a single row of large punctures; labrum concealed. Thorax about as in *A. polita,* but scutellum distinctly convex and notauli much shorter; median areas of propodeum broader, areola nearly as broad as long, hexagonal, and very close to base of propodeum, lateral abscissæ of apical carina practically continuous with median abscissa; nervulus interstitial. Abdomen broader, second and third tergites punctate at least basally, all beyond second broader than long.

Pale ferruginous, thorax laterally, petiole, and front and middle legs luteous; antennæ black, ferruginous at base and pale in middle; wings only slightly yellow tinged; hind legs ferruginous, the tarsi only slightly paler.

Type locality.—Zamboanga, Mindanao, Philippine Islands.

Type.—Catalogue No. 24039, United States National Museum. One male received from C. F. Baker.

Genus CTENOCHARIDEA novum

The pectinate claws place this genus in the Listrodromini. In Ashmead's key to that tribe it runs to *Ctenochares* Foerster. No specimen of that genus is available for comparison, but from the description of it and its various synonyms the present genus differs in having the head rather broad behind the eyes, the clypeus rounded at apex, the thorax short and stout, the propodeum without teeth, the wings not clouded at apex, and the areolet obliquely trapezoidal.

Female.—Head transverse, nearly as broad behind eyes as at eyes; temples convex; occiput deeply concave, completely margined; vertex long, the ocelli placed well forward of a line drawn tangent to posterior margins of eyes; frons concave; cheeks broad, weakly buccate but widely visible in front view of head; malar space broad, though much narrower than mandibles; eyes large, strongly convex; face slightly elevated in middle and at sides below; clypeus large, broad, separated from face only weakly by elevation, broadly arcuate at apex, foveæ small; labrum scarcely exserted; mandibles large, strongly curved, bidentate at apex, the teeth large, the upper somewhat the longer; maxillary palpi very long, reaching well beyond apex of front coxæ, second joint triangular; antennæ much shorter than body, slightly incrassate and flattened beneath beyond middle; thorax short and stout; dorsolateral margins of pronotum callose, epomia strong; notauli indicated by the elevation of the prescutum; scutellum large, about as broad at base as long, sides subparallel, rounded at apex, margined to apex, flattened above, elevated and precipitous at apex, separated from mesoscutum by a very deep and narrow furrow; postscutellum and its lateral foveæ foveolate; prepectal carina strong to near top of mesopleura, with a deep angulation at the sternaulus, the latter broadly and weakly impressed; mesopleural furrow foveolate; subalar tubercle with a high, flangelike carina; propodeum rounded above, declivous behind, without spines, areolated only in basal half, areola large, rounded in front, open behind, extending very nearly to base, spiracular area open behind, the spiracles long slitlike; pleural carina complete; legs rather long, slender, the calcaria long, claws pectinate; wings rather short, second abscissa of radius curved at base, areolet oblique trapezoidal, discocubitus weakly curved, with ramellus represented by a slight angulation; nervulus strongly postfurcal; nervellus reclivous, broken near base; abdomen long, narrow, acute at apex, with seven visible tergites, the last as long as sixth; first tergite curved, petiole slightly wider than thick, postpetiole very broad, depressed, spiracles large, elongate; second tergite with large, shallow, subtriangular gastrocœli at outer anterior corners, partially hidden by second tergite; ovipositor exserted.

Type, *Ctenocharidea luzonensis* sp. nov.

Ctenocharidea luzonensis sp. nov.

Female.—Length, 15 millimeters; antennæ, 10; front wing, 10. Head mostly polished impunctate; face and malar space closely, finely punctate; malar space half as long as basal width of mandible; clypeus obscurely punctate at base, polished at apex; pronotum polished, lower angle obscurely rugulose; mesoscutum and scutellum opaque, reticulate punctate, prescutum anteriorly only weakly sculptured; mesopleurum and metapleurum densely punctate, former with a polished impression in middle; prepectus more finely punctate; basal lateral areas polished, areola coriaceous, propodeum otherwise coarsely rugose-punctate especially in posterior middle; petiole polished, postpetiole coriaceous with a narrow line of large punctures on each side of middle; second and third tergites and fourth except at apex densely, opaquely punctate; apex of fourth and apical tergites polished.

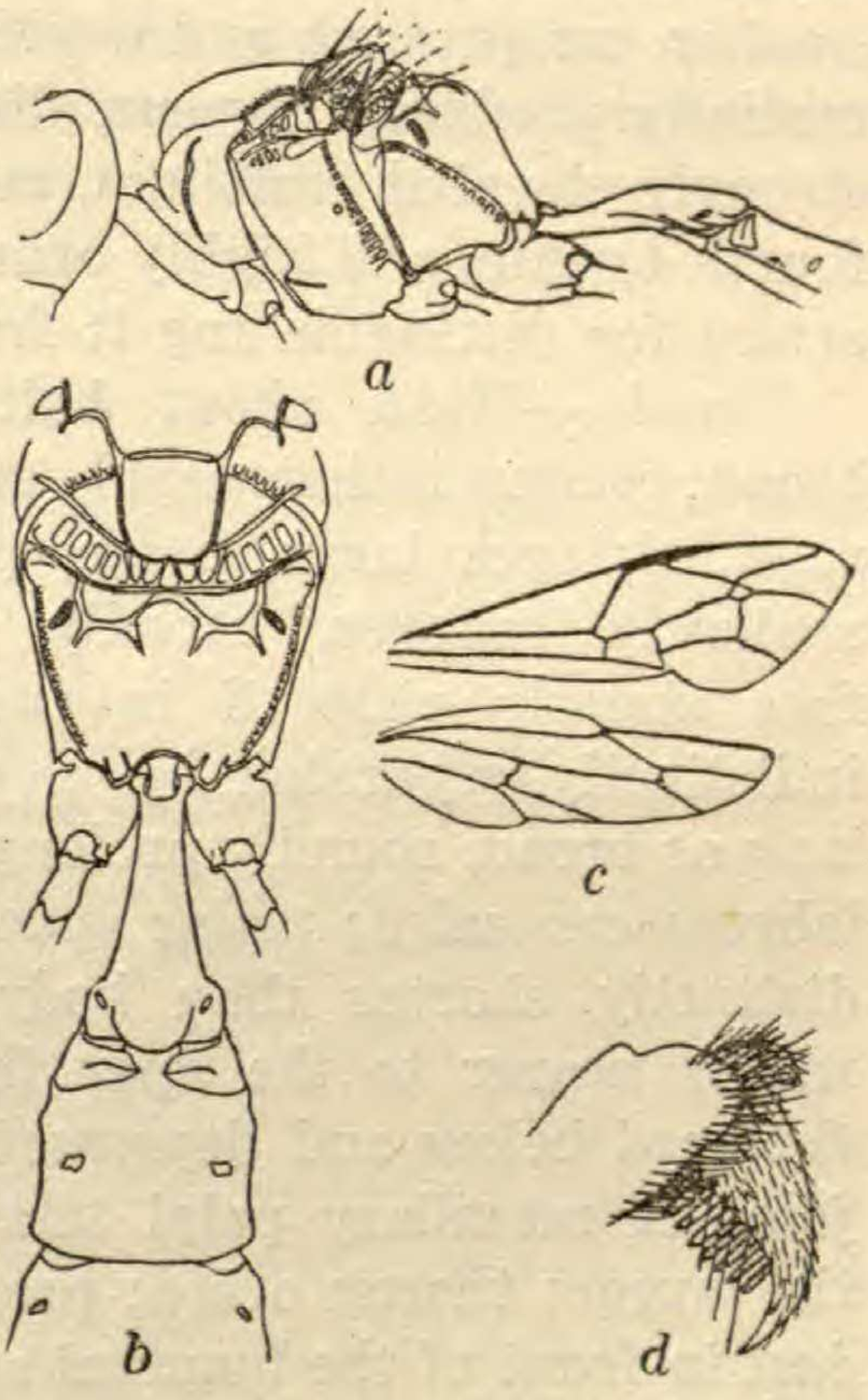

FIG. 1. *Ctenocharidea luzonensis* sp. nov.; *a*, thorax and base of abdomen, lateral view; *b*, portion of thorax, propodeum, and base of abdomen, dorsal view; *c*, wings; *d*, claw of hind tarsus.

Black with yellow markings as follows: Face, except a small median spot, clypeus, mandibles, orbits except an interruption at top of eyes, anterior margin of pronotum except a narrow interruption on each side, dorsolateral margin of pronotum, propleura below, two spots in middle of mesoscutum, apex of scutellum, base of tegulæ, lower half and upper front angle of mesopleurum and a line at its posterior margin, most of metapleurum, a spot on each side of propodeum, base of petiole, apical margins of all tergites, and gastrocœli. Antennæ black with more or less of the upper side of flagellar joints 8 to 19 white; palpi pale; front and middle coxæ and trochanters yellowish, their femora and tibiæ testaceous, more or less fuscous above, and their tarsi fuscous; hind coxæ black without, yellow within, basal joint of trochanter black, apical joint yellow, femur piceous at base and at extreme apex, otherwise testaceous, tibia and tarsus fuscous, calcaria yellow. Wings dilute brownish.

Type locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24040, United States National Museum. One female from C. F. Baker.

Genus **PYCNOPYGE** novum

In Berthoumieu's key to the Joppini [3] this runs fairly satisfactorily to the Neotropical genus *Conopyge* Kriechbaumer and, although markedly different in general appearance from that genus, apparently has more in common with *Conopyge* than with any of the Oriental joppine genera described by Cameron and Kriechbaumer. It especially resembles *Conopyge* in the thick head with the rather weakly concave occiput, the propodeal areolation, the broad, medially elevated postpetiole and the suddenly smaller, compressed, and weakly sculptured apical tergites. The medially produced clypeus, distinct notauli and sternauli, less-strongly elevated scutellum, nearly quadrangular areolet, larger fourth tergite, and highly ornamented body form the best characters for distinguishing it from *Conopyge*.

Female.—Head about half as thick anteroposteriorly as broad; occiput rather weakly concave, margined; temples broadly rounded; eyes large, ovate, parallel and entire within; frons shallowly concave, broadly margined laterally and above; face slightly elevated in the middle, flat at sides; clypeus indistinctly separated by elevation from face, flat, nearly as long as broad, roundly prolonged medially at apex, foveæ small; labrum concealed; malar space broad; cheeks convex; antennæ distinctly shorter than body, incrassate beyond middle and rather nearer to the apex than usual, the incrassate portion flattened below and depressed rather than compressed; second joint of maxillary palpi triangular; upper tooth of mandible the larger; thorax ovoid; pronotum with a short strong carina just in front of the humeral angle, the carina terminating above in a distinct angulation; epomia present; notauli and sternauli distinct; prepectal carina strong and complete, reaching nearly to dorsal margin of mesopleura; scutellum convex, margined laterally and apically; propodeum with dorsal face short, posterior face sharply declivous, concave, median longitudinal carinæ behind areola and lateral longitudinal carinæ before the apical carina lacking, areola broad, apical carina at its intersections with the lateral longitudinal carinæ forming on each side a blunt tooth, pleural carina complete, though somewhat obscured by coarse sculpture, spiracle small, elongate oval; wings immaculate; areolet nearly rhomboidal; legs short, stout, hind femur reaching to apex of second tergite; longer calcarium of hind tibia reaching beyond middle of metatarsus; abdomen lanceolate, with seven visible tergites; first tergite nearly as broad at apex as long, petiole rather slender, postpetiole abruptly wider and elevated medially, spiracles well removed from margin, round; this tergite in profile with ventral margin nearly straight, the dorsal margin ascending in a straight line to the summit of the elevation, thence at nearly a right angle to the apex; second tergite coarsely striate-punctate, gastrocœli near base, deep, transverse, separated medially by about half their length; third tergite strongly constricted at base, sculptured like the second; fourth tergite very weakly striate-punctate, tergites 5 to 7 suddenly smaller, polished, compressed, the seventh barely visible; ovipositor exserted, the sheath compressed; black, highly ornamented with yellow; antennæ white annulate.

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[3] Gen. In. fasc. 18 (1904).

Male.—Unknown.

Type, *Pycnopyge bella* sp. nov.

Pycnopyge bella sp. nov.

Female.—Length, 9 millimeters; antennæ, 6. Head polished; face sparsely, coarsely punctate; pronotum polished, with a broad foveolate groove along lower posterior margin; mesoscutum opaque, with large, irregularly spaced punctures anteriorly, the notauli foveolate, narrow for half their length, then suddenly broadening with the foveolæ large and transverse; scutellum coarsely pitted dorsally and polished and more or less striate at sides; postscutellum coarsely longitudinally striate, the lateral foveæ strongly foveolate; mesopleurum coarsely, densely punctate, broadly foveolate along posterior margin, a short foveolate groove below the subalar tubercle, a broad ridge outside the sternaulus subtending a foveolate groove; mesosternum densely punctate; metapleurum densely coarsely punctate, divided longitudinally by a strong carina, above which is a foveolate groove; propodeum with basal areas subpolished, areola transverse; rounded in front with a median longitudinal carina anteriorly and several carinæ posteriorly, middle of posterior face coarsely transversely striate, propodeum otherwise densely reticulately punctate.

Black; face, clypeus except apex and dorsal margin, orbits, interrupted narrowly at top of eye and broadening below to include entire cheeks, spots on pronotum dorsally and on ventral angle, on disk of mesoscutum, scutellum, postscutellum, upper anterior angle of mesopleurum and one in front of middle coxa, upper part of metapleurum, each side of propodeum behind, first tergite except postpetiole medially, posterior angles of second and third tergites and second basally at sides, and

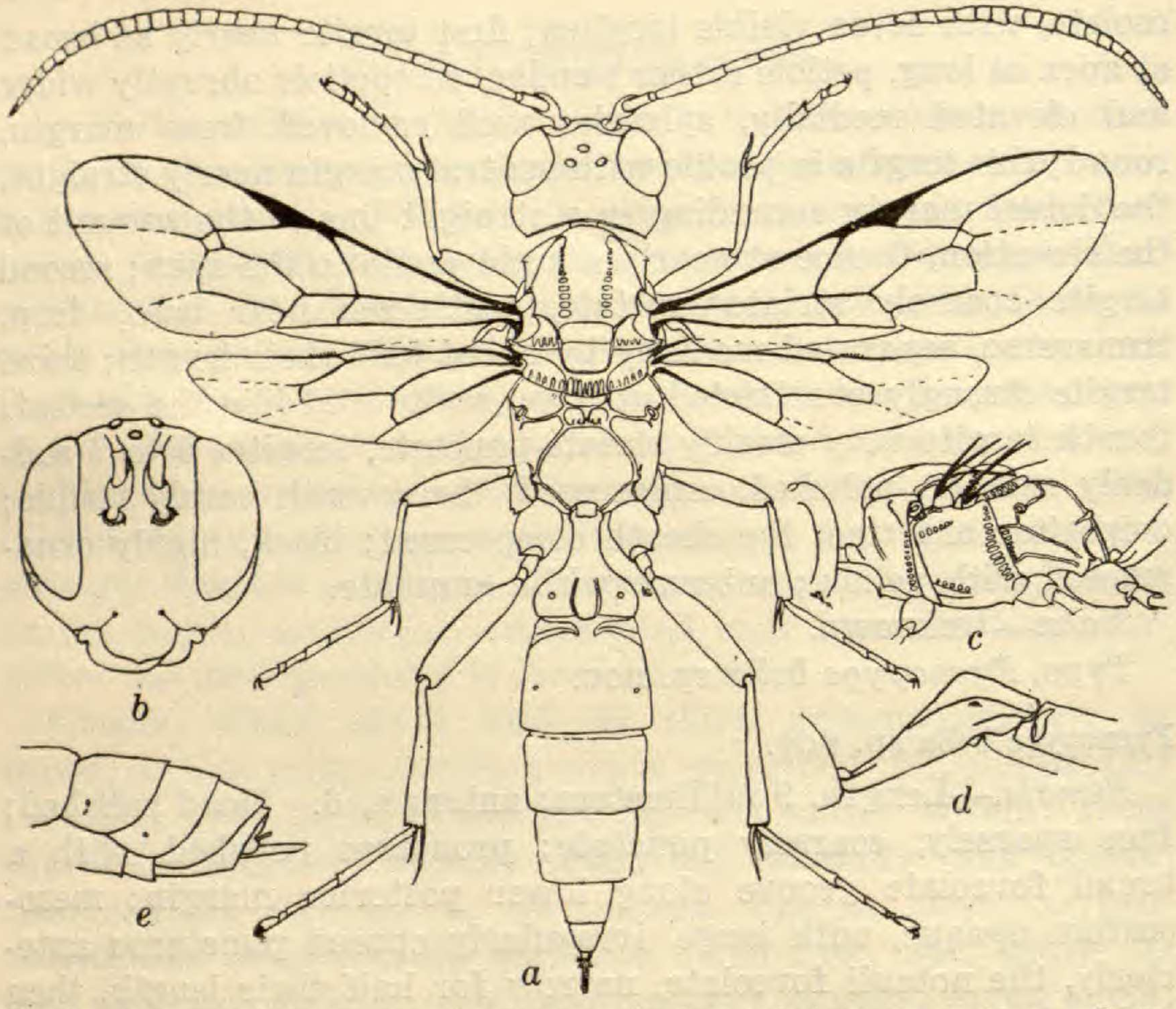

FIG. 2. *Pycnopyge bella* sp. nov., female; *a*, entire insect; *b*, head, front view; *c*, thorax, lateral view; *d*, first abdominal segment, lateral view; *e*, apex of abdomen, lateral view.

apical margins of sixth and seventh tergites yellow; mandibles piceous, slightly yellow near base; antennæ brown at base, paler below; black at apex, the white annulus occupying flagellar joints 8 to 17 incomplete below; palpi, front and middle coxæ and trochanters, and a dorsal spot on hind coxa stramineous; hind coxæ and trochanters reddish piceous; all femora and front and middle tibiæ testaceous; hind tibia above and all tarsi fuscous; wings hyaline, venation fuscous, stigma paler in middle.

Type locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24041, United States National Museum. A single specimen from C. F. Baker.

Genus NESOSTENODONTUS novum

The acute and edentate mandibles place this genus in the Heresiarchini. In Ashmead's key[4] to that tribe it runs best, because of the missing basal median area and spines of the propodeum and the immargined scutellum, to *Stenodontus* Berthoumieu; and, in spite of the very conspicuous differences, is apparently more closely related to that genus than to any of the other genera included by Ashmead or to any of Cameron's Oriental heresiarchine genera. In the apically rounded clypeus, the distinct sternauli, the straight first tergite, the exserted ovipositor, and the wing venation it is further allied to *Stenodontus.* The posteriorly and dorsally swollen head with very deeply concave occiput; the strongly dentate clypeus; the less-strongly convex face; the longer-jointed, compressed flagellum; the lack of areolation on the posterior half of the propodeum; the longer, slenderer legs; the very inconspicuous, basally located gastrocœli; and the highly ornamented body readily distinguish it from that genus.

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[4] Proc. U. S. Nat. Mus. 23 (1900) 20.

Female.—Head as broad behind eyes as at eyes, the temples convexly sloping, nearly as long anteroposteriorly as eye; occiput almost semicircularly excavated, strongly and completely margined; vertex strongly elevated above eye margins, declivous both before and behind, the upper margins of eyes and of posterior ocelli at the same level; cheeks rather weakly convex and, compared with the temples, narrow; frons not at all excavated; face weakly convex; eyes broadly reniform, parallel within; clypeus distinctly separated from face, medially by elevation and laterally by deep oval foveæ, broadly arched basally and rounded apically, the apex margined with a row of conspicous, uneven teeth; labrum not exserted; mandibles strongly curved, very acute; malar space practically obliterated; second joint of maxillary palpus triangular; antennæ about three-fourths as long as body, incrassate and somewhat compressed beyond middle; scape robust, deeply emarginate, basal joints of flagellum slender. Thorax scarcely as wide as head; pronotum with upper margin swollen laterally, epomia absent; notauli obsolete, being represented anteriorly on each side by a small pit; scutellum large, flat, not at all elevated above level of mesoscutum; prepectus strong and complete; sternauli distinct for about half the length of the mesopleura; a broad, low, polished elevation below the wings; propodeum weakly and narrowly set off from postscutellum, gently curved from base to apex, with a broad shallow longitudinal groove from apex of areola to apex, only basal lateral areas and areola defined, the basal median area represented by a single short median carina, spiracles small, about twice as wide as long; wings immaculate, areola trapezoidal, suboblique; legs long, rather slender, hind metatarsus comprising about half of the tarsus, hind coxæ with neither spine nor scopa beneath.

Abdomen with seven visible dorsal segments, narrowly lanceolate, widest behind middle, acute at apex; first segment slightly longer than second, widening rather abruptly at the round spiracles, which are at the apical fourth, in lateral view perfectly straight with the postpetiole but little higher than petiole, suture between tergite and sternite entirely absent or else the sternite is entirely concealed by the tergite; gastrocœli at extreme base of second tergite; lunulæ distinct on second and third tergites, circular; seventh tergite about as long as penultimate; hypopygidium far from apex of abdomen; ovipositor briefly exserted.

Male.—Unknown.

Type, *Nesostenodontus bakeri* sp. nov.

Nesostenodontus bakeri sp. nov.

Female.—Length, 10 millimeters; antennæ, 7.5. Face punctate, coarsely and rugosely so medially, more finely and sparsely so laterally; clypeus polished, with small, scattered punctures; frons and vertex immediately around ocellar triangle coarsely, irregularly punctate; head otherwise polished, impunctate; pronotum polished, weakly punctate anteriorly and crenulate along posterior margin; propleura densely, finely punctate; mesoscutum densely and finely punctate anteriorly, coarsely and sparsely so medially, polished impunctate laterally; scutellum polished, with a few large, very shallow punctures; lateral foveæ of postscutellum foveolate; mesopleura, except rounded elevation under wings, and prepectus densely, coarsely punctate, the former crenulate along posterior margin; propodeum opaque, basal areas sparsely and coarsely punctate; areola coriaceous; median groove coarsely, transversely punctate, almost crenulate; propodeum otherwise coriaceous with more or less distinct punctuation; coxæ, especially hind pair, densely punctate; first tergite polished, postpetiole obscurely punctate; second tergite finely, densely, longitudinally punctate; third to sixth progressively less distinctly punctate; seventh polished, impunctate; ovipositor exserted nearly the length of the seventh tergite.

Black; mandibles, clypeus, inner and posterior orbits, large spots at top of eye, on dorsolateral and anteroventral margins of pronotum, subalar region of mesopleurum, scutellum, metapleurum, and on each side of propodeum posteriorly yellow; apical margin of clypeus and scape testaceous; flagellum brown at base, black at apex, with joints 8 to 20 largely white, a narrow ventral line black; palpi and front and middle legs to near apex of femur white, legs beyond this point testaceous with last tarsal joint

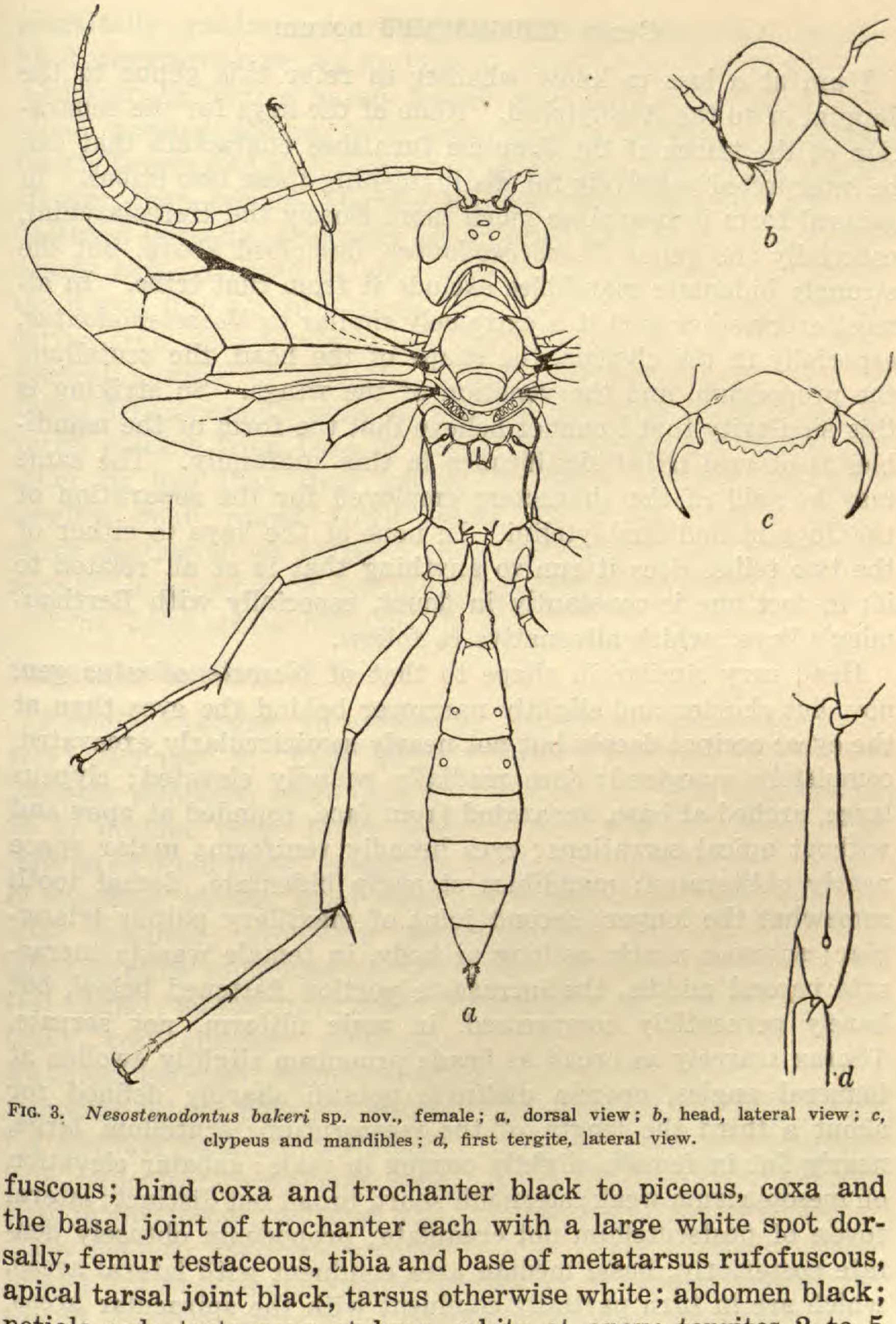

FIG. 3. *Nesostenodontus bakeri* sp. nov., female; *a*, dorsal view; *b*, head, lateral view; *c*, clypeus and mandibles; *d*, first tergite, lateral view.

fuscous; hind coxa and trochanter black to piceous, coxa and the basal joint of trochanter each with a large white spot dorsally, femur testaceous, tibia and base of metatarsus rufofuscous, apical tarsal joint black, tarsus otherwise white; abdomen black; petiole pale testaceous at base, white at apex; tergites 2 to 5 white at apex, narrowly in middle, broadly at hind angles; tergites 6 and 7 dorsally largely white.

Type locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24042, United States National Museum. Described from one female received from C. F. Baker.

Genus IDIOGNATHUS novum

I am at a loss to know whether to refer this genus to the Joppini or to the Amblytelini. None of the keys for the separation of the tribes of the Joppinæ furnishes characters that can be interpreted positively for distinguishing these two tribes. In general form it resembles much more closely the Heresiarchini, especially the genus *Nesostenodontus,* described above, but the strongly bidentate mandibles exclude it from that tribe. In almost every other part it is extremely similar to *Nesostenodontus,* especially in the clypeus, the shape of the head, the scutellum, the propodeum, and the venation of the wings. So striking is this similarity that I cannot believe that the form of the mandibles is of real tribal significance in this subfamily. The same may be said of the characters employed for the separation of the Joppini and Amblytelini. In none of the keys to either of the two tribes does it run to anything that is at all related to it; in fact one is constantly in doubt, especially with Berthoumieu's keys,[5] which alternative to follow.

Head very similar in shape to that of *Nesostenodontus* gen. nov. but shorter and slightly narrower behind the eyes than at the eyes; occiput deeply but not nearly semicircularly excavated, completely margined; face medially roundly elevated; clypeus large, arched at base, separated from face, rounded at apex and without apical serrations; eyes broadly reniform; malar space nearly obliterated; mandibles strongly bidentate, dorsal tooth somewhat the longer; second joint of maxillary palpus triangular; antennæ nearly as long as body, in female weakly incrassate beyond middle, the incrassate portion flattened below, but barely perceptibly compressed, in male filiform, not serrate. Thorax scarcely as broad as head; pronotum slightly swollen at humeral angles, epomia distinct; notauli sharply defined for about a third the length of the mesoscutum; scutellum large, nearly flat in female, slightly convex in male; subalar elevation on mesopleurum weak; sternauli short, broad but distinct; lateral foveæ of postscutellum not crenulate; propodeum obtusely dentate posteriorly; basal median area confluent with lateral areas, which are in turn partially confluent with the spiracular areas, none of the longitudinal carinæ reaching the base of the propodeum; areola broadly hexagonal, nearly round anteriorly; apical carina strong; median longitudinal carinæ obsolete or wanting behind areola; spiracles small oval; wings immaculate; areolet practically quadrangular; slightly oblique; legs long, slender, hind metatarsus nearly as long as remaining joints combined. Abdomen in female barely longer than head and thorax combined, narrow, obtuse, with seven tergites visible; in male distinctly longer and with eighth tergite visible; first tergite slightly shorter than second, slightly broader than thick at base and flattened dorsally, gradually broadening from base to spiracles, nearly half as broad at apex as long, in lateral view straight, the dorsal line a gentle curve from base to apex, with a strong carina from dorsal margin of spiracle to base and another from ventral margin of spiracle to apex, spiracles small oval, at apical fifth; second tergite with gastrocœli large, shallow, transverse, distant from base by about their length and from each other by less than their length; lunulæ on second and third tergites small, round; third tergite with large, shallow, transverse gastrocœli at extreme base partially covered by second tergite; hypopygidium retracted; ovipositor exserted.

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[5] Gen. Ins. fasc. 18 (1904).

Type, *Idiognathus balteatus* sp. nov.

Idiognathus balteatus sp. nov.

Female.—Length, 10 millimeters; antennæ, 9. Face finely, sparsely punctate, more densely so in middle, frons below and laterad of ocelli finely, irregularly arcuately striate; head otherwise polished; pronotum polished, slightly roughened on ventral angles; mesoscutum opaque, finely and sparsely punctate; scutellum polished; mesopleurum punctate below, polished above, the sternum punctate; metapleurum punctate; propodeum subopaque coriaceous, polished medially behind; abdomen opaque; second tergite longitudinally striate in its basal two-thirds, second obscurely so in basal middle; apical tergites subpolished.

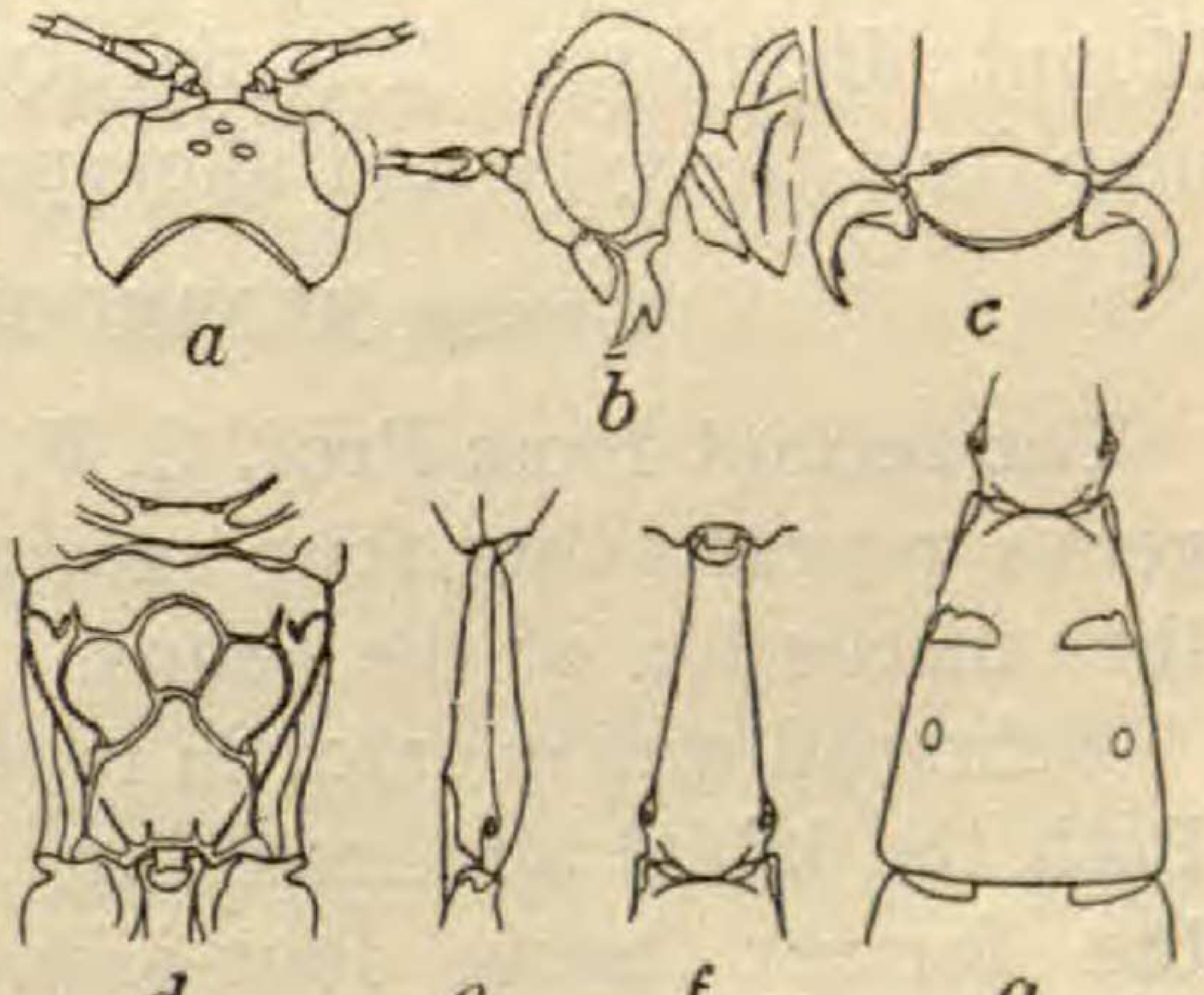

FIG. 4. *Idiognathus balteatus* sp. nov.; *a*, head, dorsal view; *b*, head, lateral view; *c*, clypeus and mandibles; *d*, propodeum; *e*, first abdominal segment, lateral view; *f*, first abdominal segment, dorsal view; *g*, second tergite, dorsal view.

Head black; mandibles, clypeus, and large spot on lower, inner orbits and at top of eyes yellowish white; palpi white; antennæ testaceous at extreme base, black at apex, with a ventrally incomplete white annulus occupying nine to ten joints beyond the sixth flagellar joint; thorax black to piceous dorsally, rufous ventrally and laterally except on prothorax; humeral and subalar spots, scutellum, and apex of propodeum yellow; legs pale testaceous; front coxæ and trochanters white; hind tibiæ slightly infuscate, calcaria darker, their tarsi white with apical joint and extreme base of first joint fuscous; wings brownish hyaline, venation fuscous, stigma slightly paler, radix white, tegula brown; abdomen black to piceous, a broad band at apex of second tergite and a large anal spot comprising part of the sixth and seventh tergites yellowish white; other tergites inconspicuously paler at apices; gastrocœli rufous.

Male.—Length, 9 millimeters; antennæ, 9. Aside from the sexual differences mentioned in the generic description, the male differs from the female practically only in having the antennal annulus two joints farther out and the anal spot including only the apical middle of the sixth tergite.

Type locality.—Los Baños, Philippine Islands.

Other locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24043, United States National Museum.

Described from two females and two males received from C. F. Baker, the females from the type locality and the males from Mount Maquiling. The paratypes differ in no essential particular from the type and allotype.

Genus **ELASMOGNATHIAS** Ashmead

The receipt from Prof. C. F. Baker of seven specimens of this genus representing four species furnishes opportunity for further discussion of the genus.

Ashmead was in error in regard to the number of palpal joints. Both the labial and maxillary palpi are normal in this respect, the former being four-jointed and the latter five-jointed. Ashmead also erred in the proportions of the scape, which in his type specimen is not more than two and a half times as long as thick. The notauli are very briefly and shallowly indicated anteriorly. The areola may be longer than wide, as in Ashmead's type, or wider than long, this variation occurring within a species. The nervellus is typically amblyteline, like half of a brace above and straight below the fracture. The mandibles are curiously twisted in such manner as to bring both teeth into the same plane as the face and clypeus.

In addition to the characters mentioned by Ashmead, the following are worthy of note: Head polished, entirely or practically impunctate except face, which is finely, weakly so; malar space long; cheeks, temples, and vertex buccate; ocelli placed well in front of posterior margins of eyes; occiput margined; face flat above with a curved ridge connecting the antennal foramina; clypeus slightly concave; antennæ nearly as long as body, slightly thickened beyond middle and very attenuate toward apex, the annulus beginning on flagellar joint 6 and including more or less of nine to eleven joints, interrupted below on all but a few joints; thorax and propodeum opaque, the sculpture rather fine; epomia strong; prepectus complete, extending dorsally about half the posterior length of the pronotum; propodeum completely areolated basally and with the petiolar area distinct, but the carinæ defining the middle and posterior lateral and pleural areas obsolete or lacking; wings reaching nearly or quite to apex of abdomen; legs, especially posterior, long, hind femur reaching nearly to apex of abdomen; longer calcarium of hind tibia reaching nearly or quite to middle of basitarsus; abdomen about as long as head and thorax, scarcely as broad as thorax, polished except second tergite and base of third; first tergite distinctly bent, postpetiole distinctly separated; spiracles rather prominent, oval.

Caenojoppa Cameron from the description is very similar in many respects and may have to supersede Ashmead's name. Except that in *Elasmognathias* the propodeum is scarcely impressed medially at base and that the abdomen has the eighth tergite visible, I would be inclined to synonymize the two genera.

Key to the species of Elasmognathias.

1. Propodeum with apophyses obsolete; thorax and propodeum strongly sculptured, the sculpture mostly punctuation; postscutellum longitudinally rugose; prepectus not subemarginate at sternauli, latter weak .... 2.
   Propodeum with apophyses strong; thorax and propodeum weakly sculptured, the sculpture mostly fine striation; postscutellum not rugose; prepectus subemarginate at sternauli; latter sharply impressed. **E. dentatus sp. nov.**
2. Spiracular area and metapleurum each with a large yellow spot; scutellar carinæ not especially high .... 3.
   Spiracular area and metapleurum entirely black; scutellar carinæ very high and laminate basally .... **E. laminatus sp. nov.**
3. Hind tarsi black at base, the calcaria reddish; scutellum evenly convex. **E. cephalotes (Ashmead).**
   Hind tarsi entirely white, the calcaria black; scutellum distinctly elevated. **E. albitarsis sp. nov.**

Elasmognathias albitarsis sp. nov.

Female.—Length, 12 millimeters; antennæ, 12; front wing, 8. Very closely allied to *E. cephalotes* (Ashmead), differing practically only as follows: Scutellum distinctly elevated, the highest point before the middle; posterior portion of propodeum with lateral and transverse carinæ practically wanting (in *E. cephalotes* these carinæ are distinct, though weaker than the others); facial black spot shaped like a spade of a playing card, with point down and not reaching clypeus (in *E. cephalotes* this spot is oblong and in the type runs laterally along the clypeal margin; in both species the spot is connected by a narrow line between the antennæ with the frontal black area); outer apical corner of tegulæ black; black of first tergite extending more than halfway to base; hind trochanters largely yellow, femur broadly black at base and apex, with a yellow spot on the outside at apex, tibia largely black with a basal yellowish spot at base confluent with the apical spot of femur and a poorly defined yellowish annulus before the middle but with no dorsal apical spot, tarsus entirely whitish, calcaria black; wings with a distinct brownish stain.

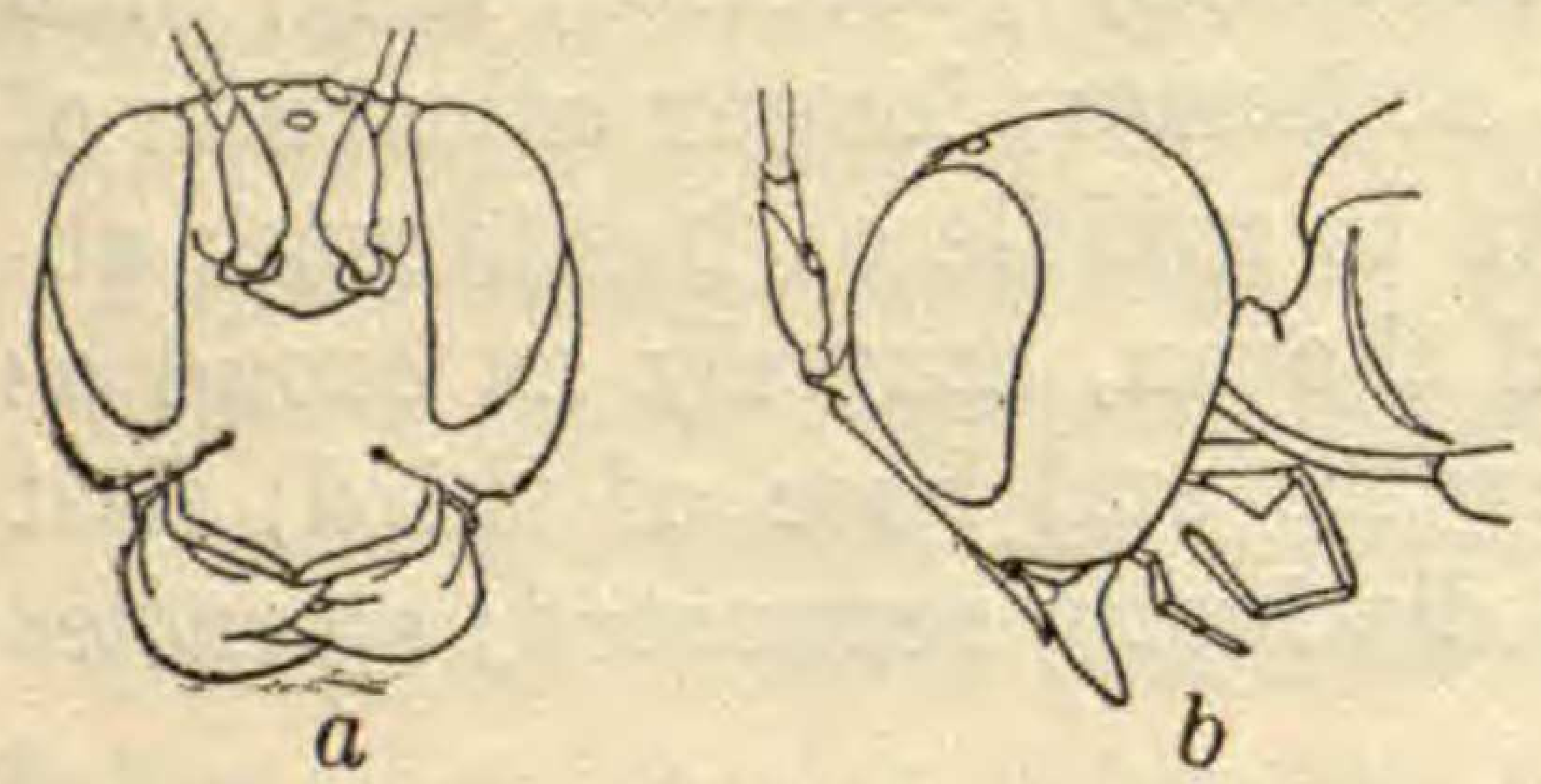

FIG. 5. *Elasmognathias albitarsis* sp. nov., head; *a*, ventrocephalic view; *b*, lateral view.

Type locality.—Mount Banahao, Luzon, Philippine Islands.

Type.—Catalogue No. 24044, United States National Museum. One specimen from C. F. Baker.

Elasmognathias laminatus sp. nov.

Distinct from any known species by the very high, laminate scutellar margins and the arrangement of the color pattern.

Female.—Length, 8 millimeters; antennæ, 8; front wing, 6.5. In structure and sculpture generally very similar to *E. cephalotes* and *E. albitarsis* but with scutellum more rugose and sloping from before the middle, very high and laminate. Color as in *E. cephalotes* except as follows: Facial black spot not connected with frontal; supraorbital spot confluent with postorbital; no mesoscutal spots; postscutellum entirely black; spiracular and metapleural spots lacking; first tergite largely black; yellow of other tergites confined largely to apical angles, except on seventh, which has a large median spot; hind coxæ black with a large yellow spot above; hind femur and tibia without yellow apical marks; hind tarsus and calcaria entirely fuscous.

Type locality.—Iligan, Mindanao, Philippine Islands.

Other locality.—Butuan, Mindanao, Philippine Islands.

Type.—Catalogue No. 24045, United States National Museum. Three females from C. F. Baker.

Elasmognathias dentatus sp. nov.

Distinct from all known species by the strong propodeal spines, striate sculpture of the thorax, and arrangement of color.

Female.—Length, 10 millimeters; antennæ (broken); front wing, 8.5. Face very weakly punctured; thorax and propodeum mostly finely striate; mesoscutum weakly punctate; scutellum elevated, at summit with a more or less distinct median elevation, postscutellum smooth; carinæ weak; prepectus subemarginate at sternauli, latter sharply impressed; propodeum with a strong blunt tooth on each side surmounted by a carina, other carinæ in this region wanting. No black mark on face; eyes entirely surrounded by yellow; thorax black, with broad anterior margin and humeral margin of pronotum, tegulæ, scutellum and postscutellum, lower half and posterior margin of mesopleurum, subalar tubercle, dorsoanterior division of metapleurum (that portion of metapleurum lying between the mesothorax and propodeum), large spot at apex of metapleurum, one on each side of propodeum surrounding and including the spines yellow; front and middle coxæ and trochanters and basal joint of hind trochanter, hind coxa except a large black spot nearly encircling the coxa yellow; front and middle tarsi fuscous; hind tarsi white, narrowly black at base; legs otherwise stramineous to testaceous, the hind femur and tibia more or less piceous at base and apex; calcaria fuscous; wings yellowish hyaline. Abdomen black with petiole, apex of postpetiole, and apices of all other tergites, more broadly at sides, yellow.

Type locality.—Los Baños, Luzon, Philippine Islands.

Other locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24046, United States National Museum. Two females from C. F. Baker.

The paratype is somewhat more heavily sculptured than the type, especially on the mesoscutum, and has the apical elevation of the scutellum less prominent.

CRYPTINÆ

The two Oriental genera treated below run in Schmiedeknecht's Genera Insectorum key to the Mesostenini directly to *Nematopodius* Gravenhorst, and are rather closely related to that genus. The following key will serve to separate the three genera:

Key to the genera of the subfamily Cryptinæ.

1. Antennæ distinctly shorter than body, somewhat thickened toward apex; areolet defined, though often open; nervellus broken below middle; propodeum without any trace of apical carina, spiracles very small, nearly round.. **Nematopodius Gravenhorst.**

   Antennæ nearly or quite as long as body, very slender, filiform or attenuate toward apex; areolet not defined; nervellus broken above middle; apical carina developed at sides; spiracles large, long oval.... 2.

2. Malar space and clypeus very short, latter extending far laterally below eyes; epomia ending above in a sharp tooth; thorax and propodeum polished, impunctate; prescutum gibbous.................. **Earrana Cameron.**

   Malar space and clypeus not especially short, latter not especially produced laterally; epomia becoming obsolete above; thorax and propodeum very coarsely punctate; prescutum very low anteriorly. **Esuchonematopodius g. nov.**

Genus **EARRANA** Cameron

Earrana CAMERON, Spolia Zeylanica 3[10] (1905) 119, pl. B., fig. 3.
Parca MORLEY, Rev. Ich. in Brit. Mus., pt. 2 (1913) 133; Fauna Brit. India, Hym. 3, Ichn., pt. 1 (1913) 301, fig. 102.

I think there can be no doubt of the synonymy of Morley's genus. His type is from the identical locality with Cameron's, and so far as the two generic descriptions treat of the same structures they coincide very closely. There also seems to be very little if any reason to doubt the synonymy of the two genotypes. In Morley's placing of the genus it is without doubt "a remarkably distinct genus" and "by no means a typical Paniscid."

The following generic description includes characters not mentioned by either Cameron or Morley and introduces the hitherto unknown male: Entire body polished, practically without sculpture; head distinctly wider than thorax, transverse, with temples convexly sloping; eyes large, prominent, their inner margins entire, convergent below; clypeus distinctly separated, very broad and extending laterally far under eyes, foveæ touching eyes; mandibles very narrow at apex, the lower tooth obsolete to absent; occiput rather deeply concave, the carina lacking medially; antennæ nearly as long as body, very slender, filiform; maxillary palpi long, all joints slender, slightly deeper than high; pronotum with a strong curved carina along its anterolateral margin, epomia strong, straight, ending above in a sharp tubercle; propleura longitudinally carinate outwardly; notauli deep and complete, meeting before the scutellum, prescutum and lateral lobes strongly convex; scutellum nearly convex, margined at base; sternauli nearly complete, weakly double-curved; prepectus reaching about halfway up mesopleurum; propodeum extending far beyond base of hind coxæ; basal carina of propodeum strong, apical carina developed laterally; spiracle rather large, long oval; wings long, narrow; stigma very narrow, lanceolate, radius far before middle; second intercubitus entirely lacking, first much reduced, recurrent nearly interstitial; nervulus antefurcal; nervellus strongly reclivous, broken distinctly above middle, upper abscissa perpendicular to cubitella; legs very slender; front basitarsus longer than combined remaining joints; abdomen much narrower than thorax, its basal three segments combined as long as head and thorax combined; first tergite very narrow, with an acute projection on each side at base, spiracles just before middle, prominent; second tergite subequal in length to first, but little wider at apex than at base, constricted near base, with an oblique furrow on each side before the constriction, spiracles slightly before middle, remaining tergites little longer than first two combined; ovipositor sheath about as long as first tergite; valves of the sheath in male long and slender, much as in *Mesochorus*, slightly clavate at their apices.

Earrana dimidiatus (Brullé).

> *Ischnoceros dimidiatus* BRULLÉ, Hist. Nat. Ins. Hym. 4 (1843) 262, pl. 42, fig. 1.

I think there can be no doubt of the propriety of referring this species to *Earrana*.

Earrana malayensis sp. nov.

Female.—Length, 10 millimeters; antennæ, 9; ovipositor, 1.7; front wing, 7. Face below little more than half as broad as vertex; clypeus slightly more than twice as wide as long, apex sinuate medially; malar space about half as long as basal width of mandible; ocellocular line fully as long as width of ocellar triangle; upper end of epomia only slightly more prominent than the rest; depression behind epomia and lower posterior margin of pronotum, lateral depressions of postscutellum, and mesopleural furrow foveolate; first tergite about twice as wide at apex as at narrowest point; second distinctly more than twice as long as wide at apex, its sides parallel beyond spiracles; third two-thirds as long as second; others of rapidly decreasing length; ovipositor sheath slightly longer than first tergite.

Ferruginous; vertex and frons more or less piceous; inner orbits from top of eye, entire face and clypeus, and mandibles

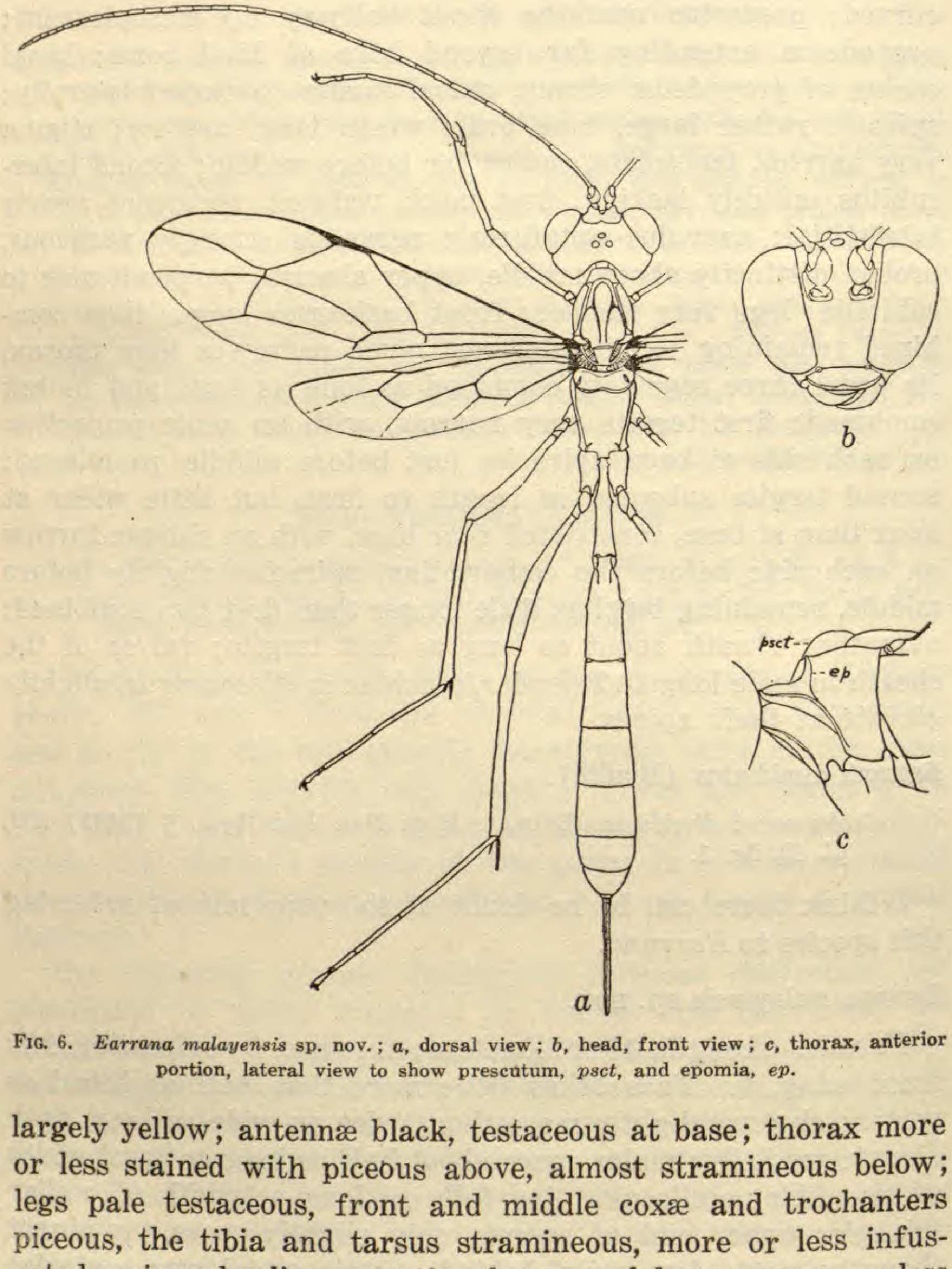

FIG. 6. *Earrana malayensis* sp. nov.; *a*, dorsal view; *b*, head, front view; *c*, thorax, anterior portion, lateral view to show prescutum, *psct*, and epomia, *ep*.

largely yellow; antennæ black, testaceous at base; thorax more or less stained with piceous above, almost stramineous below; legs pale testaceous, front and middle coxæ and trochanters piceous, the tibia and tarsus stramineous, more or less infuscated; wings hyaline, venation brown; abdomen more or less stained with piceous especially toward apex.

Type locality.—Singapore, Malay Peninsula.

Type.—Catalogue No. 24047, United States National Museum. Two females received from C. F. Baker.

Earrana philippinensis sp. nov.

Differing from *E. malayensis* sp. nov. principally in color. The male is selected as the type because of its much better condition, the head of the female being broken off and glued to the double mount and the antennæ mostly missing.

Male.—Length, 13 millimeters. Antennæ stramineous, ferruginous at base; head not at all piceous and with the yellow color not extending above the antennæ; thorax ferruginous above without piceous stains; mesopleura and mesosternum stramineous; upper end of epomia strongly elevated, metapleura vertically wrinkled; stigma much paler than other venation; hind legs not at all piceous or fuscous; sheath nearly as long as first tergite from base to spiracle.

Female.—Agrees very closely with the male.

Type locality.—Philippine Islands, probably Luzon.

Type.—Catalogue No. 24048, United States National Museum.

Described from one male and one female collected by C. R. Jones.

Genus **ESUCHONEMATOPODIUS** novum

Differs from *Earrana* Cameron as follows: Head and thorax, especially the latter, strongly sculptured; posterior two-thirds of temples nearly flat and nearly perpendicular to axis of body; occipital carina obsoletely developed; vertex and frons strongly, sparsely punctate, becoming foveolate at side of frons; eyes weakly convergent below; face and clypeus punctate; latter indistinctly separated medially, not extending far laterally below eyes; thorax very coarsely punctate, becoming striate in middle of mesopleura; epomia fading out above far below dorsal margin of pronotum; front coxæ with a high carinate ridge in front; prescutum declivous anteriorly; lateral lobes each with a deep longitudinal furrow; mesosternum with an acute tubercle before each middle coxa; intercubitus obliterated, recurrent postfurcal; propodeum coarsely punctate, very sparsely so before basal carina; apical carina angulately prominent on each side; hind coxæ coarsely punctate above; abdomen subopaque, first tergite and base of second polished; first tergite nearly linear; spiracles barely protruding; spiracles of second tergite slightly behind middle; ovipositor sheath much longer than first tergite; sheath in male normal, not extending beyond apex of abdomen.

Type, *Esuchonematopodius luzonensis* sp. nov.

Esuchonematopodius luzonensis sp. nov.

Female.—Length, 12 millimeters; antennæ, 12; ovipositor, 3.5; front wing, 9. Face below three-fourths as broad as vertex; clypeus about half as long as wide, broadly rounded at apex; malar space as long as basal width of mandible, ocellocular line and width of ocellar triangle equal; first tergite scarcely wider at apex than at spiracles; second more than twice as long as wide at apex; others of rapidly decreasing length; ovipositor sheath nearly twice as long as first tergite.

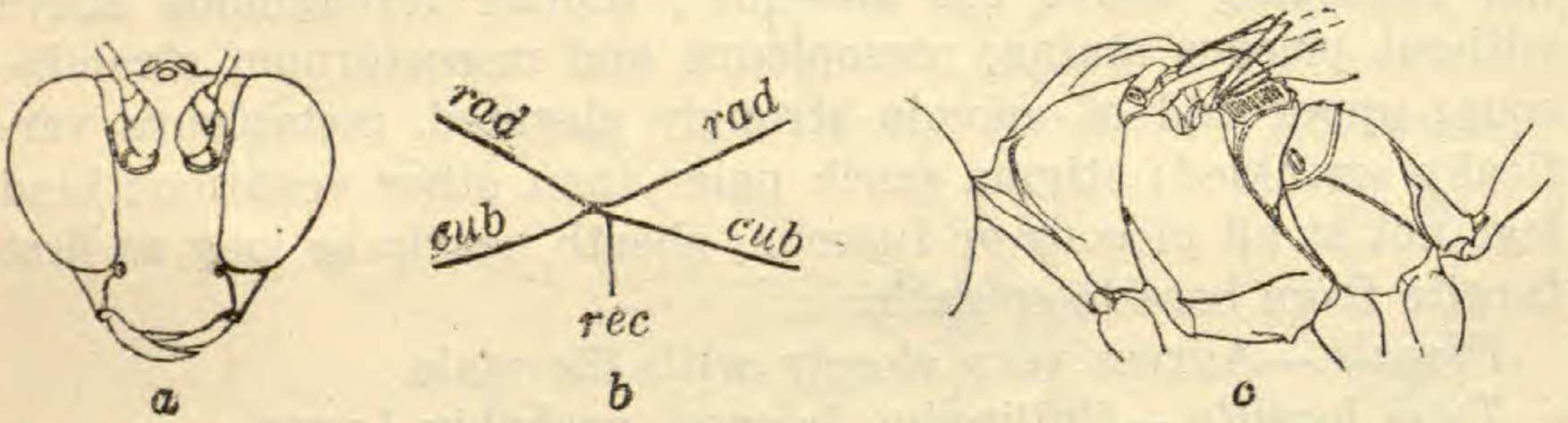

FIG. 7. *Esuchonematopodius luzonensis* sp. nov.; *a*, head, front view; *b*, venation in areolar region; *rad*, radius; *cub*, cubitus; *rec*, recurrent; *c*, thorax, lateral view.

Ferruginous; head and thorax below paler; legs testaceous, front pair and all coxæ paler; wings hyaline, venation brown; antennæ ferruginous.

Male.—Malar space somewhat narrower and antennæ paler than in the female; otherwise much the same.

Type locality.—Philippine Islands, probably Luzon.

Type.—Catalogue No. 24049, United States National Museum.

One female and three males collected by C. R. Jones and one female from Mount Maquiling, Luzon, collected by C. F. Baker.

Genus MANSA Tosquinet

Mansa TOSQUINET, Mem. Soc. Ent. Belg. 5 (1896) 209.
Colganta CAMERON, Ent. 35 (1902) 20.

This peculiar genus has much in common with the Palæarctic *Megaplectes* Foerster. The second joint of the maxillary palpus is even larger than in *Megaplectes* though not triangular; the head is of much the same form as that of *Megaplectes* though all of its features are exaggerated, as is frequently found to be the case in tropical genera closely related to genera of more northern range; the propodeum is similar but shorter and more strongly concave; the abdomen is shorter with the apical tergites relatively smaller; the venation, except for the unusual shape of the areolet, is very similar; and the long calcaria and large apical tarsal joints are almost duplicated in *Megaplectes*. In the new allied genus *Ceratomansa*, described below, the strong notauli and sternauli, almost lacking in *Mansa*, are almost exactly as in *Megaplectes*.

Seven specimens referable to this genus are at hand. Six from the Philippine Islands represent two closely related species, apparently distinct from any of the described Oriental or Australian species. In a key that I have constructed from the descriptions of all of the species from these two regions the females of both species run to *M. fulvipennis* (Cameron) and the males to *M. volatilis* (Smith). Cameron's species, however, is from northern India and, moreover, is very meagerly described, the entire description being composed of the characters mentioned in a key to five species from that locality and a few others mentioned later in the description of *M. latiscutis* (Cameron). Cameron's description of the propodeal areolation of *M. fulvipennis* is rather obscure, but it is apparently more nearly complete than in the two Philippine species. (*Cryptus*) *Mansa volatilis* (Smith) from Mysol is described in the female and is said to have the antennæ black with a pale annulus, with which the present males agree but not the females. The seventh specimen is a female from Siam. It is very distinct by reason of its entirely black thorax and very dark wings.

The key mentioned above with the three new species inserted is reproduced below. It is based very largely on color because many of the species, notably Smith's and Cameron's northern Indian species, are described practically only by color.

Key to the Oriental and the Australian species of Mansa.

1. Black or largely black .... 2.
Thorax black; head, abdomen, and legs rufous to ferruginous; wings very dark .... M. bicolor sp. nov. (Siam.)
Ferruginous, fulvous or flavous, sometimes marked with black .... 3.
2. Wings fuscous; second tergite fuscoferruginous; basal half of antenna ferruginous; 16 millimeters, ovipositor 6.
M. funerea Turner. (Indo-China.)
Wings not fuscous; abdomen black with apical two tergites white-marked; antennæ black with joints 8 to 17 white beneath; 15 millimeters, ovipositor 4 .... (Colganta) rufipes (Cameron). (Borneo.)
3. Mesoscutum more or less black or blackish .... 4.
Mesoscutum ferruginous .... 5.
4. Hind femora, tibiæ, and tarsi black; 15 millimeters, ovipositor about 3.
(Colganta) nigro-maculata (Cameron). (Borneo.)
Hind femora and tibiæ red; 15 millimeters.
M. conformalis Tosquinet, female. (Java.)
5. Areolet not distinctly narrowed below, intercubiti straight; 12 millimeters, ovipositor 2.
(Colganta) tuberculata (Cameron).[6] (Northern India.)
Areolet narrowed below, the intercubiti oblique .... 6.
6. Hind tarsi not black, at most only slightly annulated with black or with apical joints only black .... 7.
Hind tarsi black .... 13.

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[6] The characters used constitute the entire description of this species.

7. Wings dark violaceous; antennæ blackish with dark fulvous annulus; 16 millimeters, male only.
(Colganta) fulgidipennis (Cameron).[7] (Northern India.)
Wings hyaline, suffused yellow or fulvous, rarely with a fuscous cloud behind stigma or at apex .... 8.
8. Antennæ flavous or ferruginous at base, broadly black at apex .... 9.
Antennæ black, yellow annulate .... 11.
9. Antennæ without white annulus; scutellum narrowed at apex with gradual slope; wings without a cloud; 12 millimeters, ovipositor 4.
(Colganta) fulvipennis (Cameron).[7] (Northern India.)
[The two Philippine species described below run here in the female, but have the propodeum less completely areolated. They can be separated from each other as follows:]
9*a*. Clypeus with a median, apical tooth; face very coarsely rugose-punctate laterally; frons coarsely punctate; scutellum with rather coarse, separated punctures; areolet not nearly twice as long beyond recurrent as before; inner spur of hind tibia barely reaching to middle of basitarsus .... **M. bakeri sp. nov.**
Clypeus without an apical tooth, medially narrowly impressed and emarginate; face at sides sparsely punctate; frons finely punctate; scutellum with fine confluent punctures; areolet about twice as long beyond recurrent as before; inner spur of hind tibia reaching distinctly beyond middle of basitarsus.
M. luzonensis sp. nov.
Antennæ tricolored with a whitish annulus .... 10.
10. Apical half of wing infumate; scutellum triangular; 17 millimeters.
M. pulchricornis Tosquinet, female. (Java and northern India.)
Wings entirely hyaline; scutellum broadly rounded at apex, apical slope abrupt; 17 millimeters, ovipositor 3.
(Colganta) latiscutis (Cameron). (Northern India.)
11. Costa black .... **M. conformalis** Tosquinet, male only. (Java.)
Costa ferruginous .... 12.
12. Wings without fuscous cloud behind stigma, which is entirely ferruginous; 7 lines; female only.
(Cryptus) volatilis (Smith). (Mysol.)
[The two Philippine species described below run here in the male, but the females lack the white antennal annulus. The males can be separated by the key given under couplet 9*a* above.]
Wings with fuscous cloud behind stigma, which is margined with black.
M. volatilis subsp. fumipennis Turner. (Northern Queensland.)
13. Tibiæ black .... 14.
Tibiæ at most black at apex .... 15.
14. Length 12 millimeters; male only.
(Colganta) tibialis (Cameron).[8] (Northern India.)
Length 17 millimeters; ovipositor 5; female only.
(Colganta) annulicornis (Cameron). (Borneo.)

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[7] The characters used in the key constitute the entire original description. This species was further described by Cameron in his description of *Colganta latiscutis*.

[8] The characters used constitute the entire description of this species.

15. Hind femur, apex of tibia and tarsus black; 12 millimeters; ovipositor 2 .... (Colganta) varicornis (Cameron). (Borneo.)
Hind femur not black .... 16.
16. Wings apically infumate; 6⅓ lines; male only.
(Cryptus) sicarius (Smith), male (=*Cryptus tarsatus* Smith, according to Cameron).[9]
Wings not apically infumate; 12 millimeters; male only.
(Colganta) tarsalis (Cameron).[8] (Northern India.)

Mansa bakeri sp. nov.

Female.—Length, 18 millimeters; antennæ, 18; ovipositor, 4.5; front wing, 15. Frons with sparse, obscure, large punctures on a granular surface, medially shallowly canaliculate; face medially slightly elevated, densely punctate, laterally irregularly transversely rugose; clypeus finely punctate, less densely so than middle of face, flattened, truncate at apex with a small median tooth; malar space longer than basal width of mandible; cheeks nearly straight; temples sparsely punctate; eyes prominent, parallel within. Thorax opaque above, subpolished laterally; pronotum densely punctate above, rugulose in the depression; mesoscutum and scutellum, the latter at sides as well as dorsally, very densely finely punctate and clothed with blackish hairs; notauli entirely absent; scutellum elevated, rounded behind in both dorsal and lateral views; mesopleurum shining, obscurely rugulose-punctate anteriorly, more strongly so ventrally; prepectus punctate, rugulose anteriorly; mesopleural furrow foveolate; sternauli broad, rugulose; sternum minutely punctate; metapleurum punctate anteriorly, merging into coarse vertical rugosity posteriorly, with posterior ventral corner separated by a sharp, curved carina; propodeum opaque granulate with more or less obscure rugosity, especially on posterior face, and with the rugosity of the metapleurum extending onto the lower posterior angle, median carinæ obsolete throughout, lateral carinæ obsolete anteriorly, strong posteriorly, basal carina entirely lacking, apical carina very strong at sides, wanting in middle, the propodeum medially impressed nearly its entire length, distinctly separated from metapleura only anteriorly, spiracle very long, occupying fully half the length of the space between base of propodeum and apical carina; hind coxa distinctly punctate, the tibia and tarsus equal in length; inner calcarium of hind tibia reaching barely to middle of basitarsus; areola much broader on radius than

[9] The female of *sicarius* Smith will run here if the tarsi are black, but the original description says nothing on this point.

on cubitus, first intercubitus strongly oblique, second nearly vertical, recurrent somewhat before the middle; nervellus strongly reclivous but not sharply broken. Abdomen smooth, without sculpture; postpetiole nearly or quite half as wide as entire first tergite is long, with a longitudinal furrow between the spiracles, flanked on either side by a shorter one.

Ferruginous, the head in front and thorax laterally slightly paler; basal three-fifths of antennæ fulvous, apex black; palpi flavous; legs testaceous, apices of hind tibia and tarsal joints slightly fuscous, apical joint rufous; wings uniform yellow hyaline; ovipositor sheath yellow.

Male.—Length, 12 millimeters; antennæ, 11; front wing, 12. Differs from female principally in the color of the antennæ and hind legs, the scape and pedicel being flavous, the flagellum black with the basal joints fulvous below and a pale annulus about the middle, the hind tibia with the apical half black, and the tarsus pale yellow; the sculpture is somewhat weaker.

A paratype female is like the type except in being somewhat smaller, in having the postpetiole slightly narrower, and the sculpture, especially of the propodeum and metapleurum, weaker.

Type locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24050, United States National Museum.

Described from the above three specimens all received from Prof. C. F. Baker. The paratype female is from Los Baños, Luzon.

Mansa luzonensis sp. nov.

Closely allied to *M. bakeri* sp. nov. and differing principally as follows:

Female.—Length, 14 millimeters; antennæ, 14; ovipositor, 3.5; front wing, 12.5. Frons minutely, granularly punctate; sides of face only obscurely punctate; clypeus narrowly impressed and emarginate medially at apex; temples impunctate; pronotum as in *bakeri* but the rugulosity very weak; pubescence of mesoscutum and scutellum cinereous instead of black; mesopleurum and prepectus punctate but scarcely at all rugulose; sternauli punctate; metapleurum and propodeum less strongly rugose; carina of metapleurum nearly straight; propodeal carinæ on the whole more distinct but the apical carina and apical abscissa of lateral carina weaker; hind tarsus slightly longer than tibia, inner calcarium reaching distinctly beyond middle of basitarsus; recurrent vein at about the proximal third of areolet; first tergite slender, postpetiole not nearly half as wide as segment is long.

Colored like *bakeri* but with hind tibia and tarsal joints not black at apex, the tarsus distinctly paler than tibia.

Male.—Length, 10.5 millimeters; antennæ, 11; front wing, 10.5. Differs from female in color of antennæ and hind legs, the antennæ being black, pale at base and medially annulate, the hind tibia having its apical two-thirds black, and the tarsus being yellow with the basal joint narrowly black at base.

A paratype female is slightly smaller than the type.

Type locality.—Philippine Islands, probably Luzon.

Type.—Catalogue No. 24051, United States National Museum.

Described from the above three specimens, the type labeled "Acc. No. 771, Bur. Agr., P. I., collected by C. R. Jones;" the allotype male from Los Baños, Luzon (*Baker*); and the paratype female from Mount Maquiling, Luzon (*Baker*). The paratype is returned to Professor Baker.

Mansa bicolor sp. nov.

Very distinct by reason of its black thorax, red head, abdomen, and legs, and very dark wings. It is apparently closest to *funerea* Turner, which, however, has only the second tergite reddish and the ovipositor relatively shorter.

Female.—Length, 19 millimeters; antennæ (extreme tips gone); ovipositor, 8; front wing, 16. Frons finely granulate, medially punctate and canaliculate; face medially elevated and coarsely, densely punctate, laterally reticulate-rugose; clypeus distinctly separated from face by elevation, coarsely and sparsely punctate, broadly truncate at apex and with the margin medially slightly reflexed; malar space distinctly longer than basal width of mandible; cheeks coarsely punctate, the punctuation gradually weaker dorsally until on posterior slope of vertex it disappears entirely. Thorax coarsely sculptured; pronotum dorsally and mesoscutum densely punctate, scutellum less densely so and polished; pronotum below, mesopleurum, metapleurum, and propodeum reticulate-rugose; propleura polished, sparsely and obsoletely punctate; mesosternum more finely and less densely punctate than mesoscutum; notauli entirely wanting, sternauli practically so; scutellum elevated, margined only at extreme base; propodeum with lateral and pleural carinæ complete, the first curving forward in middle nearly to base, no traces of basal carina present, lateral especially strong above spiracle; areolet much broader on radius than on cubitus, first intercubitus very strongly oblique and curved, second nearly perpendicular and straight, second recurrent much nearer base than apex;

nervellus strongly broken, lower abscissa strongly oblique, upper nearly perpendicular. Abdomen polished, second tergite very finely punctate; first tergite a third as wide at apex as long, its surface smooth, without furrows or other sculpture.

Thorax, coxæ, tegulæ, and apical half of antennæ black; head, basal half of antennæ, and legs ferruginous to testaceous; ovipositor black, sheath pale ferruginous; wings very dark.

Type locality.—Trong, Lower Siam.

Type.—Catalogue No. 24052, United States National Museum. One female, W. L. Abbott, collector.

Genus **CERATOMANSA** novum

This genus is closely allied to *Mansa* Tosquinet; the most striking differences are indicated in the following key:

1. Frons shallowly concave, unarmed; vertex deeply concave; antennæ stout, especially beyond middle, apex blunt; maxillary palpi very long, reaching far beyond apex of front coxæ; notauli practically wanting; sternauli weak; basal carina of propodeum wanting; legs stout, hind tarsi not white annulate.. **Mansa** Tosquinet.

Frons deeply concave, with a strong median compressed horn; vertex nearly level with top of eye; antennæ slender, barely thickened beyond middle, attenuate at apex; maxillary palpi barely reaching apex of front coxæ; notauli and sternauli strong; basal carina of propodeum strong; legs, especially the tarsi, slender, hind tarsi black with third and fourth joints white .... **Ceratomansa** g. nov.

In addition to the characters given in the key, *Ceratomansa* differs from the three species of *Mansa* described on preceding pages as follows: Slenderer; head and thorax less strongly sculptured; face impressed on each side of middle; malar space not longer than basal width of mandible; prepectal carina complete; speculum partly striate; apical tarsal joint much shorter than third; areolet much smaller, scarcely half as long on radius as basal abscissa of radius, second recurrent beyond middle; discocubitus slightly angulate; nervulus antefurcal; postnervulus strongly broken; basal abscissa of discoideus much more than twice as long as nervulus.

Type, *Ceratomansa prima* sp. nov.

Ceratomansa prima sp. nov.

Female.—Length, 15 millimeters; antennæ, 18; ovipositor, 5; front wing, 14. Temples, cheeks, face, and clypeus coriaceous, last two opaque and sparsely punctate; frons subpolished and somewhat irregularly rugulose; vertex punctate; upper inner orbits swollen; vertex precipitous behind; occipital carina very strong, especially medially; ocellocular and postocellar lines equal, diameter of lateral ocellus slightly shorter; eyes large, bulging, parallel within, much longer than width of face; malar space barely as long as basal width of mandible; clypeus distinctly separated from face, as long as interfoveal line, broadly truncate at apex; mandibles short, teeth blunt, upper larger and very slightly longer than lower; apical joint of maxillary palpus only slightly shorter than fourth. Thorax largely finely densely punctate; pronotum rugose below, epomia strong but not reaching upper margin; scutellum shining, sparsely punctate, margined only at base, fovea with several longitudinal rugæ; mesopleurum largely rugose above, speculum elevated and polished only behind, the anterior part embraced by the rugosity; sternauli incomplete behind but deep and partly foveolate, the posterior end curving suddenly upward; propodeum punctate before and reticulate-rugose behind basal carina, weakly concave on posterior slope, pleural carina obsolete, being largely replaced by a foveolate groove, apical carina prominent laterally; coxæ punctate, especially posterior pair. Abdomen beyond first tergite very finely shagreened; first tergite polished, petiole slender, tergite and sternite completely fused, postpetiole at apex about three times as wide as narrowest part of petiole, spiracles slightly nearer to each other than to apex, petiole flattened above, the flattening becoming a slight impression between the spiracles; ovipositor slender.

Ferruginous; head black, inner orbits, face except impressions, cheeks, indistinct line on posterior orbits, clypeus, mandibles except apices, and palpi largely whitish; antennæ black with a ventrally incomplete white annulus on flagellar joints 7 to 14; upper margin of pronotum, tegulæ, wing bases, scutellar carinæ, prepectus and subalar tubercle, and posterior margin of mesopleurum luteous; legs testaceous, apical tarsal joints on all legs, basal two joints of hind tarsus, and apices of its tibia and femur black; wings hyaline, slightly stained with yellow, venation black, stigma white at extreme base; tergites 2 and 3 slightly stained with blackish at sides; ovipositor sheath black.

Type locality.—Shoalhaven, New South Wales.

Type.—Catalogue No. 24053, United States National Museum. One female (G. W. F., 1895).

Genus **HEMIGASTER** Brullé

Only five species from the Oriental and Australian Regions have been described in this genus; and one of these, *H. jacobsoni*

Szépligeti from Java, is certainly misplaced. It properly belongs in the genus *Syrites* Tosquinet, where it is very closely related to the Philippine (*Astomaspis*) *Syrites metathoracica* (Ashmead). None of the other four species is available for study, but the two new species, one from Singapore and one from the Philippine Islands, described below, are apparently distinct from either, as indicated by the following key which includes all six species:

Key to the Oriental and the Australian species of Hemigaster.

1. Luteous, vertex and back of abdomen red. H. luteus Brullé. (Australia.)
   Ferruginous .... 2.
2. Notauli present........ 3.
   Notauli absent........ 5.
3. Hind tarsi pale........ H. carinifrons Cameron. (Assam.)
   Hind tarsi black........ 4.
4. Second tergite with a broad black band at base; sides of face and of vertex brown .... H. fasciatus Brullé. (East Indies.)
   Immaculate ferruginous .... H. malayensis sp. nov. (Singapore.)
5. Mesoscutum with three fuscous marks; wings apically infuscate. H. insularis Roman. (Philippine Islands.)
   Mesoscutum immaculate; wings yellowish hyaline, paler at apex. H. bakeri sp. nov. (Philippine Islands.)

Hemigaster malayensis sp. nov.

Female.—Length, 9 millimeters; antennæ, 8.5; front wing, 7.5. Vertex laterally with large, rather sparse punctures, which merge anteriorly into the irregular rugosity of the sides of frons; interocellar space opaque, without distinct sculpture; margined only at sides, the carinæ merging into the general sculpture above; median horn thick and canaliculate on dorsal edge, bilobed at apex; face and clypeus reticulate-rugose, more coarsely so at sides, elevated in middle; clypeus without a median apical tooth; cheek and lower temple transversely rugose, this fading out to fine, rather dense punctuation at the middle of the eye. Pronotum rather finely punctate above, coarsely foveolate in ventral angle and along anterior and posterior margins; mesoscutum rather finely, very densely punctate, notauli distinct to middle, prescutum with a median groove anteriorly; scutellum sculptured like the mesoscutum, tapering to the very narrow apex, and with strong lateral carinæ extending to the apex; mesopleurum densely rugulose with an oblique, transversely striate area in the middle; anterior and posterior furrows foveolate; prepectal carina approaching anterior margin gradually;

sternaulus deep, complete, and strongly foveolate; mesosternum with a rounded tubercle in front of mesocoxæ but with no ridge running forward from these; metapleurum rather finely rugulose-punctate; propodeum irregularly reticulate-rugose at sides, subpolished and transversely striate medially, carinæ strong and thin, especially the apical carina which is high and flangelike but without distinct apophyses, propodeal area concave, separated from posterior lateral only by difference in sculpture; discocubitus broken; nervellus broken nearly at a right angle; hind coxa without a carina on its exterior dorsal margin; inner calcarium of hind tibia reaching distinctly beyond middle of basitarsus; abdomen finely, densely punctate, first tergite polished at base and with the median dorsal carina distinct and well separated to base; third tergite strongly rounded at apex; ovipositor as long as second tergite.

Ferruginous with short, golden, appressed pubescence; face stramineous; flagellum blackish, brownish at base, especially beneath, with an incomplete whitish annulus dorsally occupying joints 4 to 8; wing slightly smoky, costa and stigma light brown, other veins blackish; legs testaceous; front and middle coxæ and trochanters stramineous; hind femur and tibia at apex, hind tarsus entirely, and apical joints of other tarsi black; calcaria reddish; ovipositor sheath black.

Male.—Very similar to female but with the antennal annulus smaller and less distinct and the stigma largely blackish.

Type locality.—Singapore, Malay Peninsula.

Type.—Catalogue No. 24054, United States National Museum.

Described from two females and two males, all received from C. F. Baker.

There is considerable variation in size, the largest female, the type, being 9 millimeters long and the smallest male, paratype *b*, only 5.5.

Hemigaster bakeri sp. nov.

Female.—Length, 12 millimeters; antennæ, 10; front wing, 9. In addition to being larger, differs from *malayensis* as follows: Vertex laterally densely reticulate-punctate, the sides of the frons more coarsely but not differently sculptured; interocellar space with a few large punctures; frontal concavity margined nearly to middle above, the carina high and sharp and sending a branch carina dorsally where it begins to arch over the concavity; median horn very thin on dorsal edge, not bilobed at apex; face at sides and clypeus coarsely transversely rugose-punctate, more finely so toward middle and with a narrow unsculptured median line; clypeus with a small median tooth at apex; cheeks with coarse, separated punctures becoming smaller and sparser on temples where they gradually disappear. Pronotum coarsely punctate above, otherwise as in *malayensis;* mesoscutum more coarsely punctate, notauli and median groove of prescutum wanting; scutellum sculptured like mesoscutum, narrow at apex, obscurely margined only at base; mesopleurum coarsely punctate, the striate area of *malayensis* here replaced by a smooth polished area, anterior furrow obscure, not foveolate; prepectal carina bending sharply toward anterior margin shortly above level of ventral angle of pronotum; sternaulus deep anteriorly but fading out shortly behind middle of pleurum, not foveolate; mesosternum with a ridge running forward from the antecoxal tubercle; metapleurum coarsely rugose-punctate; propodeum medially punctate, carinæ mostly rather weak but with distinct apophyses that are fully as high as their basal width, propodeal area only slightly concave, separated from posterior lateral by distinct carinæ; discocubitus not broken; nervulus not triangularly broadened at its lower end; nervellus broken at a very wide angle, hind coxa with a high, sharp carina on its exterior dorsal margin; inner hind calcarium barely reaching middle of basitarsus. Abdomen more coarsely punctate, especially on petiole, which is polished only at extreme base, the median dorsal carinæ almost contiguous on the petiole and nearly obliterated by the coarse sculpture; third tergite broadly rounded at apex; ovipositor as long as second tergite.

Colored like *malayensis* except that the wings are yellowish hyaline, the hind femur not black at apex, the hind tarsus yellow with the apical joint reddish, and the ovipositor sheath reddish at base.

Male.—Differs from female practically only in having the basal two-thirds of the antennæ ferruginous with only the faintest indication of the annulus.

Type locality.—Los Baños, Luzon, Philippine Islands.

Other localities.—Mount Maquiling and Mount Banahao, Luzon, Philippine Islands.

Type.—Catalogue No. 24055, United States National Museum.

Described from three females and two males, all received from C. F. Baker. Only slight variation in size is displayed by the type series.

Genus **ROTHNEYIA** Cameron

Three species have been referred to this genus by Cameron, all from India, while Schmiedeknecht records one of them also from Java. The second species described, *annulicornis* Cameron, differs so markedly in structural characters from the others that one wonders, not having examined it, if it is properly placed in the genus. These differences are brought out in the following key to the species. The new species tabulated and described below is apparently typical of the genus.

Key to the species of Rothneyia.

1. Third tergite not toothed at apex; flagellum white-annulated; separation between second and third tergites obscure; scutellum without teeth, simply margined .... **R. annulicornis Cameron.**
   Third tergite toothed at apex; flagellum not white-annulated; separation between second and third tergites distinct; scutellum with teeth at apex .... 2.
2. Petiole ferruginous .... **R. wroughtoni Cameron.**
   Petiole black.. 3.
3. Antennæ longer than body.. **R. fortispina Cameron.**
   Antennæ shorter than body.. **R. insularis sp. nov.**

Rothneyia insularis sp. nov.

Male.—Length, 6 millimeters; antennæ, 4.5; front wing, 4.5. Head transverse, in front view roundly triangular, temples slightly convex, sharply sloping; frons with large, separated punctures, the middle narrowly polished, impunctate; vertex very sparsely punctate; face densely, confluently punctate, becoming striately so in middle; clypeus sparsely punctate, not separated from face by a furrow but by difference in sculpture, longer than face, gently convex and rather sharply rounded at apex; malar space two-thirds as long as basal width of mandible; eyes convergent to level of antennæ, thence parallel, slightly sinuate above antennæ; antennæ distinctly shorter than body, basal three joints of flagellum subequal and each scarcely longer than scape, the flagellum attenuate at apex; postocellar and ocellocular lines equal and distinctly longer than diameter of ocellus. Thorax opaque dorsally and ventrally, shining laterally; pronotum polished with a few rugæ posteriorly and sparsely punctate above, epomia distinct but fading out below dorsal margin; mesoscutum densely punctate, notauli distinct anteriorly, lateral lobes flanked by a deep groove laterally; scutellum rugose, posterior angles very high and prominent, apical slope abrupt, with a few longitudinal rugæ, lateral areas polished, foveolate above and below; mesopleurum polished in middle, rugulose-punctate dorsally and anteriorly, mesopleural furrow foveolate, prepectal carina very sharp, curving backward below the front wing to join the carinate dorsal margin of the pleurum; sternauli complete, deep and broad anteriorly; sternum densely punctate, median furrow very broad and deep; propodeum and metapleurum irregularly rugose; basal area confluent; spiracle round, situated on a raised area; apophyses very prominent; pleural carinæ and costellæ obscured by sculpture; nervulus interstitial; areolet higher than long, intercubiti slightly convergent above; bullæ large, second intercubitus largely hyaline; nervellus strongly inclivous, broken at lower fourth. Abdomen coarsely reticulate-rugose; first tergite as wide at apex as long, median carinæ convergent beyond middle, not attaining the apex but becoming obscured by the sculpture, spiracles subtuberculate; second and third tergites separated by a distinct suture, third with prominent apical angles.

Black; antennæ toward base and palpi brownish; front and middle legs brownish piceous, their tibiæ and tarsi pale; hind legs darker; wings hyaline, immaculate.

Type locality.—Los Baños, Luzon, Philippine Islands.

Type.—Catalogue No. 24056, United States National Museum.

Described from one male collected by C. F. Baker.

Genus **SYRITES** Tosquinet

Syrites TOSQUINET, Mem. Soc. Ent. Belg. 10 (1903) 117.
? *Camptolynx* CAMERON, Berl. Ent. Zeit. 55 (1910) 252.

I am somewhat doubtful of the synonymy of *Camptolynx*. Cameron states that in the male this genus has the spines on the fourth tergite. In *Syrites* they are on the third. Aside from this Cameron's description is very like *Syrites*, and it may be that he was mistaken as to the location of the spines or that there is variation within the genus in this respect.

Acanthoprymnus Cameron, from South Africa, synonymized by Schmiedeknecht with *Syrites*, seems not to be the same genus. It is described in the female as having spines on the third tergite, a character not found in the female of *Syrites*.

The peculiar structure of the abdomen in the male and the marked sexual antigeny have led to the description of species properly placed here in no less than seven genera. All are from the Australian and Oriental Regions.

The following key is based on the descriptions of all of the Australian and Oriental species that I have been able to identify as probably belonging to this genus and material of two species from the Philippines. Because the color has as a rule been more carefully described, practically all of the characters used are color characters. It should be noted, however, that the color, especially of the thorax, is variable in both sexes. There seems very little reason to doubt that several of the species will have to sink into synonymy. Thus I strongly suspect that *jacobsoni* and *bidentatus* of Szépligeti will prove to be synonymous with *metathoracica* (Ashmead), as *striatus* (Ashmead) undoubtedly is.

Key to the species of Syrites.

1. Males .... 2.
Females .... 7.
2. Abdominal spines on fourth tergite .... 3.
Abdominal spines on third tergite .... 4.
4. Thorax ferruginous and black .... 5.
Thorax usually entirely black .... 6.
5. Mesopleura ferruginous.
(Camptolynx) froggatti (Turner). (Australia.)
Mesopleura black .... (Hemigaster) jacobsoni (Szépligeti). (Java.)
6. Only the first tergite pale; mandibles black; propodeal spiracles rather large .... S. acanthogaster Tosquinet. (Sumatra.)
Both first and second tergites pale; mandibles pale; propodeal spiracles small.
(Astomaspis) metathoracica (Ashmead) (=*Bathythrix striatus* Ashmead). (Philippine Islands.)
7. Thorax black .... (Camptolynx) ruficornis (Turner). (Australia.)
Thorax ferruginous or partly so .... 8.
8. Hind tibia with a distinct pale annulus in the middle, second and third tergites each with a narrow transverse subapical furrow, which with a reversely curved basal furrow set off a distinct median area.
S. arealis sp. nov. (Philippine Islands.)
Hind tibia without such an annulus; transverse furrow of second and third tergites broad and shallow, basal furrows obsolete .... 9.
9. Both front and hind wings with fuscous band.
(Camptolynx) froggatti (Turner). (Australia.)
Only the front wings maculate .... 10.
10. Front wing clouded from base to basal vein.
(Hemiteles) bidentatus (Szépligeti). (Java.)
Front wing hyaline at base .... 11.
11. Hind tarsus narrowly pale at base.
(Camptolynx) striatus (Cameron). (Ceylon.)
Hind tarus entirely black .... 12.
12. Thorax black before, ferruginous behind; clypeus yellow; scape and pedicel black .... (Ischnocerus?) cancellatus (Brullé). (Java.)
Thorax usually entirely ferruginous, rarely with mesoscutum and pronotum blackish; clypeus at most fuscoferruginous; scape and pedicel stramineous below.
(Astomaspis) metathoracica (Ashmead). (Philippine Islands.)

(Hemigaster) Syrites jacobsoni (Szépligeti).

Notes Leyden Mus. 29 (1908) 245, male.

This Javanese species is apparently so closely allied to *S. metathoracica* (Ashmead) that a male of the latter species compared with Szépligeti's description differs only in having the thorax and propodeum entirely black and the nervellus distinctly antefurcal.

(Hemiteles) Syrites bidentatus (Szépligeti).

Notes Leyden Mus. 29 (1908) 252, female.

This species, also from Java, is very likely the female of *S. jacobsoni* (Szépligeti). Szépligeti is the only one who has mentioned the lateral angulations on the third tergite in the female, but the analogy between these and the spines on the male escaped him.

(Ischnocerus?) Syrites cancellatus (Brullé).

Hist. Nat. Ins., Hym. 14 (1846) 262, female.

In the preceding key I have separated *S. bidentatus* (Szépligeti) from this and two other species on account of the clouded base of the wing. As a matter of fact Brullé makes no mention of this, describing the wing simply as having an incomplete brown band; and I suspect that Szépligeti has redescribed Brullé's species, especially as they are from the same island.

Syrites acanthogaster Tosquinet.

Mem. Soc. Ent. Belg. 10 (1908) 118, male.

This Sumatran species seems to be distinct from the rest in having only the first tergite red, the mandibles black, and the propodeal spiracles large and slightly oval; it may be that I am wrong in referring the other species to *Syrites*, but in all other respects Tosquinet's description accords so well with the male of *S. metathoracica* (Ashmead) that it seems impossible that they are not congeneric.

(Camptolynx) Syrites ? fuscipennis (Cameron).

Berl. ent. Zeit. 55 (1910) 253, male.

This and the following species, both from Ceylon, are the basis of Cameron's genus. Because of the stated position of the spines on the fourth tergite instead of the third they are, as stated above, doubtfully referred to *Syrites*, and Cameron's genus is doubtfully synonymized with *Syrites*.

(Camptolynx) Syrites ? quadrispinosus (Cameron).

Berl. ent. Zeit. 55 (1910) 253, male.

The status of this species is discussed under the next preceding.

(Camptolynx) Syrites striatus (Cameron).

Berl. ent. Zeit. 55 (1910) 254, female.

Regardless of whether or not *Camptolynx* is synonymous with *Syrites* there can, I think, be no doubt that this Ceylonese species is a *Syrites* although a comparison of the descriptions of this and *S. quadrispinosus* almost leads to the conviction that they are the sexes of the same species.

(Camptolynx) Syrites froggatti (Turner).

Ann. & Mag. Nat. Hist. IX 4 (1919) 41, female and male.

In having the hind as well as the front wings banded this Australian species is apparently distinct from all of the others.

(Camptolynx) Syrites ruficornis (Turner).

Ann. & Mag. Nat. Hist. IX 4 (1919) 42, female.

The entirely black thorax and propodeum, unusual in the female, renders this species very distinct. It is from Australia.

(Astomaspis) Syrites metathoracica (Ashmead).

Astomaspis metathoracica ASHMEAD, Proc. U. S. Nat. Mus. 28 (1904) 140, female.
Bathythrix striatus ASHMEAD, op. cit. 141, female.
Acanthohemiteles benjamini Ashmead manuscript, BROWN, Philip. Journ. Sci. 1 (1906) 692.

In spite of its broken nervellus and complete notauli, and in spite of the fact that the clypeus and mandibles do not agree with Foerster's description, Ashmead placed the unique type of *metathoracica* in *Astomaspis*, to which genus it was the first species referred. Because of these disagreements with the original description it cannot be the genotype of *Astomaspis*. Nor is it at all closely related to the accepted genotype, *Astomaspis nanus* (Gravenhorst), first assigned to the genus in 1910 by Roman.

On the page following the description of *metathoracica* Ashmead described another specimen, of the same species, as *Bathythrix striatus*, placing it in that genus despite its obvious disagreement with the genotype, *Bathythrix meteori* Howard, the type specimen of which was in the collection over which he had charge. The name *metathoracica* is unfortunately chosen, for the color character on which it is based is not conspicuous and is an apparently rather rare variation, the thorax being usually entirely ferruginous.

What I take to be the male of this species is represented in the National Museum collection by four specimens, all taken at Manila, Philippine Islands, by Rev. Robert Brown. These are the *Acanthohemiteles benjamini* Ashmead manuscript, of Brown's list of Philippine Hymenoptera. There are also nine additional females taken at the same place by the same collector. Aside from the very different abdomen the male differs from the female principally in having the thorax black or largely black. In one of the four specimens examined the propodeum is piceorufous. In the female the third and fourth tergites are subangulate laterally at apex.

Syrites arealis sp. nov.

Differs from *S. metathoracica* (Ashmead) and apparently from all of the other described species in the structure of the second and third tergites, the usual transverse furrow meeting laterally the extremities of a basal reversely curved furrow, the two setting off a transverse median area.

Female.—Length, 5 millimeters; antennæ, 4. Slenderer than *S. metathoracica* (Ashmead). Head distinctly broader than thorax; temples strongly convex; vertex with striæ radiating in all directions from ocelli, a deep short groove between the lateral ocelli; frons transversely, arcuately striate; face finely, confluently punctate, elevated medially; clypeus punctate, medially irregularly striate; face, clypeus, and cheeks clothed with moderately dense white pubescence; temples and cheeks irregularly vertically striate, posterior orbits punctate; malar space nearly as long as basal width of mandible. Thorax subopaque; pronotum with the lateral furrow deep, subpolished, the dorsal portion somewhat swollen and obliquely striate; mesoscutum obscurely transversely striate, each lobe with a median opaque streak; scutellar fovea deep and foveolate but not distinctly carinately margined before and behind; scutellum reticulate punctate, margined laterally to middle; mesopleurum, metapleurum, and propodeum with long white pubescence, the pleura confluently, almost rugosely punctate; propodeum irregularly rugulose, the basal areas not defined, areola hexagonal, removed from base by its own length, lateral carina distinct only beyond apical carina, petiolar area nearly vertical, shorter than dorsal face of propodeum, spiracles small, round; apical abscissa of radius slightly decurved; discocubitus subangulate at about its basal third; nervulus barely antefurcal; nervellus inclivous, broken below middle; hind tibia strongly compressed, as broad as femur. First four tergites striate, others polished, fifth weakly striate at base; first distinctly longer than wide at apex, spiracles just behind middle; second and third tergites each with a transverse area set off by basal and subapical curved furrows; fifth constricted near base; ovipositor less than half as long as first tergite.

Ferruginous, with head and abdomen beyond second segment black; antennæ brown, scape and pedicel testaceous; mandibles pale, the oral margins more or less red; palpi stramineous; tegulæ and humeral angles stramineous, radices of wings and base of stigma white; wings hyaline, the front wing weakly stained to basal vein, with a broad dark band across the broadest part, and a small obscure spot on the nervulus; hind wing immaculate; legs testaceous, hind femur largely piceous, tibia fuscous, with a white basal annulus and obscurely pale in the middle, tarsus fuscous; middle tibia with same color pattern obscurely developed; tergites beyond second piceous black.

Type locality.—Manila, Philippine Islands.

Type.—Catalogue No. 24057, United States National Museum. One female taken by Rev. Robert Brown.

Genus **CHRYSOCRYPTUS** Cameron

The species described below is apparently very closely allied to, if not the same as, the undescribed male referred by Roman[10] to this genus and on the strength of which that author synonymized Cameron's genus with *Leptocryptus* Thomson, especially the subgenus *Panargyrops* Foerster. Roman was of the opinion that Cameron mistook the costellæ for the spiracles.

The species before me differs in several respects from Cameron's description, as follows: The spiracles are round instead of linear; the ovipositor sheath is clothed with black instead of white hair; the first three joints of the flagellum are not four times as long as thick; the discocubitus is angulate and with a very short ramellus; the clypeus is distinctly tridenticulate at apex; the areola is not rounded at base; and the radius is not thickly pilose at base. From the genotype as described it differs markedly also in being entirely bright ferruginous with the legs uniformly testaceous and the wings entirely hyaline. Because of these differences I refer it very doubtfully to *Chrysocryptus*.

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[10] Arkiv. Zool. 8[15] (1913) 9.

It is certainly very closely allied to *Panargyrops*. The position of the propodeal spiracles far in front of the costellæ is very characteristic, and together with the long pubescence and general habitus indicates the close relationship. I would not, however, go so far as to place it in *Panargyrops* because of the very broad, unseparated, tridentate clypeus and the very long upper tooth of the mandible.

Chrysocryptus ? romani sp. nov.

Both generic and specific characters are given in the following description:

Female.—Length, 12 millimeters; antennæ, 7; ovipositor, 7; front wing, 10. Entire body polished and practically without sculpture, clothed with long, mostly erect, golden pubescence, this embracing also the coxæ, trochanters, and femora especially of the hind legs, and the wings especially the costa (on the wings the pubescence is blackish).

Head transverse; the temples convexly sloping; vertex broad, elevated above level of top of eyes; occipital carina strong, gradually fading out on lower cheeks; head in front view transverse; eyes very large, prominent, convergent below; malar space almost obliterated; face more than twice as broad as long, slightly impressed on each side below antennæ, its pubescence subappressed; clypeus much longer than face, very weakly separated, lateral angles and foveæ nearly touching the eyes, nearly flat with apex broadly rounded and with three distinct denticles in the middle; mandibles large, slightly tapering and with the upper tooth much longer than the lower; palpi rather short, slender, the apical two joints of maxillary palpi together but little longer than third; antennæ rather slender, slightly stouter beyond middle and tapering toward apex; apex of scape only slightly oblique; flagellar joints becoming gradually shorter from basal, which is about three times as long as thick. Thorax small, narrower than head, much smaller behind; notauli strong and terminating abruptly, without joining, shortly before the scutellar fovea; pronotum practically without pubescence, with a short foveolate groove at lower angle, epomia strong but short; prescutum sharply defined, the carina emarginate opposite the sternauli, wihch are very deep anteriorly but become obsolete posteriorly; mesopleural furrow foveolate above; metapleurum separated from sternum by a high carina, from the anterior end of which a short carina extends obliquely onto the pleurum;

scutellum convex, immargined; postscutellum long, bifoveolate at base; propodeum completely areolated, all the carinæ high and sharp; areola large, coffin-shaped, longer than petiolar area; spiracle round, situated far before the costella and nearer the lateral than the pleural carina; apex of propodeum extending distinctly over the bases of hind coxæ; wings large; stigma narrow, lanceolate; discocubitus angularly broken and with a very short ramellus, its bulla small and nearer the ramellus than the intercubitus; areolet nearly equilaterally pentagonal, the second intercubitus largely bullated; second recurrent curved outward, meeting the subdiscoideus at nearly a right angle, its bulla large and uninterrupted; nervulus interstitial; nervellus reclivous, broken at about the middle; radiella becoming obsolete shortly beyond intercubitella, cubitella entirely so; legs very slender, hind tibia about as long as thorax; front tarsus longer than, hind tarsus as long as, their tibiæ, claws and calcaria small. Abdomen subclavate; first tergite very narrow throughout, compressed, completely fused with sternite, without carinæ, spiracles distinctly before middle; second tergite about twice as long as wide at apex, nearly three times as wide at apex as at base, in lateral view concave above, with an obsolete carina running from base to spiracle; first tergite and base of second polished and with sparse erect pubescence, abdomen otherwise with dense subappressed pubescence in addition to the erect; apical tergite elongate, trowel-shaped; ovipositor slender, nearly as long as abdomen, the sheath with black pubescence.

Bright ferruginous, the face slightly paler; flagellum blackish, paler at base; legs testaceous, the tarsi slightly infuscated; wings hyaline, venation brown; ovipositor sheath black.

Male.—Like the female in almost every respect, but with the front and middle legs stramineous.

Type locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24058, United States National Museum.

Described from one female and one male received from Prof. C. F. Baker.

I take pleasure in dedicating this beautiful and interesting species to Dr. A. Roman, of Stockholm.

Genus **APOPHYSIUS** novum

This very curious genus is anomalous wherever placed. Owing to the strongly compressed abdomen it has a superficial ophionine appearance, but the form of the areolet, and the sternauli preclude its being placed in the Ophioninæ. Aside from the compression of the abdomen most of the customarily used characters ally it with the Cryptinæ. The extremely broad areolet is unusual though not unique in the Cryptinæ, that of *Protocryptus* Schmiedeknecht being very similar. In the Cryptinæ the completely defined areolet and areolated propodeum place it in the Phygadenonini, where it seems to me less discordant than in any other placing. Here the narrow first tergite with spiracles placed in the middle is almost duplicated in *Thysiotorus* Foerster as represented by *T. lamina* (Thomson) and in *Panargyrops* Foerster. These two genera also have the bidentate clypeus and the silky pubescence of the head; while in *T. lamina* the shape of the head and the relative length of the basal flagellar joints, though slenderer, are not very different. Except that the areolet is much broader and the stigma narrower with the radius originating near its base, the venation of the present genus differs in no essential particular from that of *Panargyrops*. If couplet 3 in Ashmead's key to the Phygadenonini, the character in which can hardly be considered of generic value, be omitted, the genus runs to *Panargyrops*, though not agreeing with the last sentence. From either of these genera it is at once distinguished by the structure of the propodeum, the compressed abdomen, and the shape of the areolet.

Head from above strongly transverse with temples very narrow; from in front very broadly transverse, subtriangular; eyes large, bulging, convergent below, malar space very short; clypeus separated by elevation, bidentate at apex, mandibles bidentate, upper tooth larger and longer; scape short, subglobose, flagellum tapering at apex, first joint much longer than second; entire body, including legs, and especially the head and thorax clothed with long, silvery hairs; pronotum short, polished, with lower angle foveolate, epomia fairly strong, sharply curved; mesoscutum flattened, polished, notauli obsolete, each lateral lobe with a deep, broad, longitudinal furrow, prescutum with two parallel shallow furrows; scutellum strongly convex, not margined, basal fovea very broad and deep; postscutellum bifoveate at base; mesopleurum polished, wide in upper portion, prepectus broad below, ending above not far above ventral angle of pronotum, sternauli broad and shallow and extending about half the length of mesopleurum, subalar tubercle carinate at top; propodeum short, sloping from base, completely areolated, the intersections of the lateral carina with each of the transverse carinæ forming a prominent apophysis, the posterior one long and slender, the anterior one large and triangular in outline, embracing the entire basal abscissa of the lateral carina, and opposed on the metapleurum by a pyramidal apophysis, each basal lateral area bearing a prominent tubercle opposed on metapostnotum by a sharp point, areola small, wider before than behind; petiolar area very narrow in front, wider behind, the apical portion of the median carinæ very high and thin, spiracles elongated oval; metasternum very short, the middle and hind coxæ very close together; legs long and slender, claws small, simple; wings large, stigma narrow with radius distinctly before middle, apex of radius far before apex of wing, areolet much broader on radius than high, intercubiti parallel, second mostly bullated, discocubitus angulated in middle, nervulus interstitial, basal abscissa of radiella and intercubitella subequal in length, nervellus reclivous, broken in middle; apical abscissæ of all longitudinal veins in hind wing obsolete except small portion of radiella; abdomen strongly compressed beyond second tergite, polished; first tergite slender, scarcely widened at apex, spiracles in middle, prominent; second tergite a little wider at base than first at apex, more than twice as long as wide, nearly parallel-sided, spiracles shortly before middle; ovipositor sheath about as long as first tergite.

Type, *Apophysius bakeri* sp. nov.

Apophysius bakeri sp. nov. Plate 1.

Female.—Length, 10.5 millimeters; antennæ, 8.5; ovipositor, 1.5; front wing, 9. Head from in front fully two-thirds broader than long; malar space nearly obliterated; clypeus slightly broader than long; face below about two-thirds as broad as vertex, latter broader than greatest diameter of eye; ocellocular line longer than width of ocellar triangle; ocelli large, diameter fully twice as long as postocellar line; face very finely, densely punctate, opaque; head otherwise polished; thorax and propodeum polished; hind tibia distinctly longer than tarsus, latter with basitarsus about half the entire length, last joint slightly shorter than third.

Black, with the following markings: Quadrate spot on middle of face, outer corners of clypeus, small marks on inner orbits reddish; scape, pedicel, prothorax except posterior margins of notum and apex of pleurum, origins of notauli, scutellum, post-scutellum, tegulæ, spot below each wing, upper portion of metapleurum behind hind wing, hind margin of mesopleurum, posterior face of propodeum, including hinder apophyses, apices of anterior apophyses, a spot astride the pleural carina, front and middle coxæ largely and apical half of hind coxa, apices of basal trochanter joints, apices of all femora and more or less of the lower side, front and middle tibiæ above, petiole dorsally before spiracles, apices of first and second tergites broadly and of others narrowly, and second sternite white to yellowish white; legs, except as noted, piceous to black; flagellum black above, brown below; mandibles piceous; wings brownish stained, the stain deeper beyond stigma along anterior margin, venation blackish, metacarpus pale.

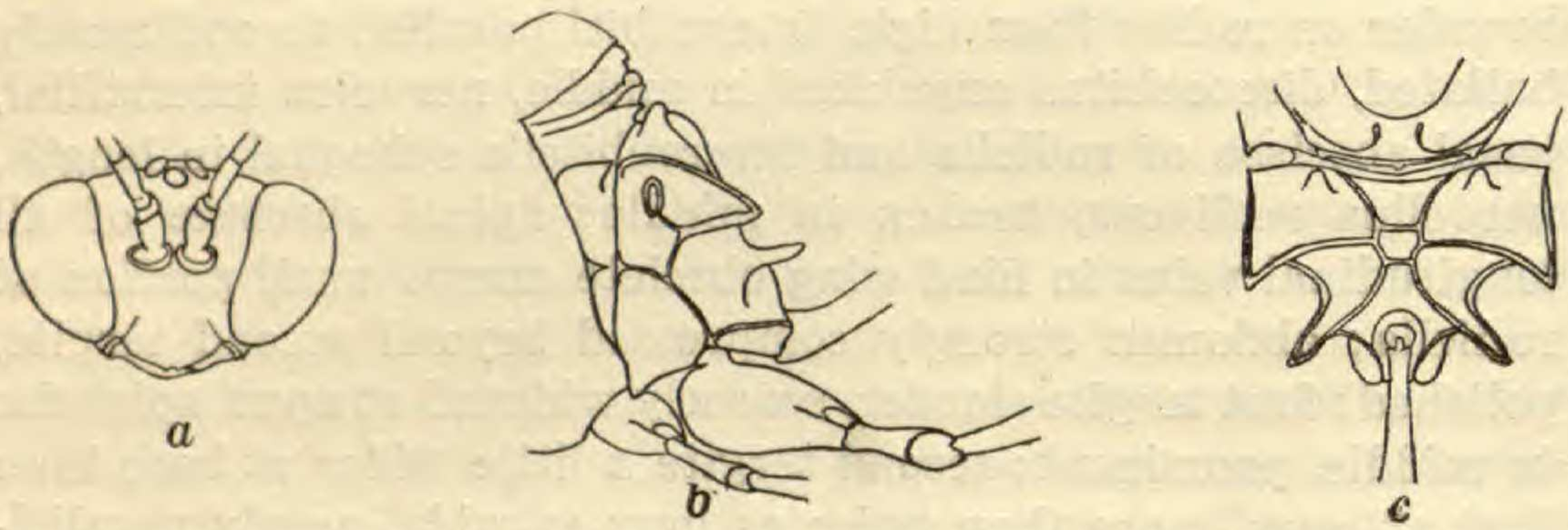

FIG. 8. *Apophysius bakeri* sp. nov.; *a*, head, front view; *b*, propodeum, lateral view; *c*, propodeum, dorsal view.

Male.—Practically identical with the female.

Type locality.—Mount Maquiling, Luzon, Philippine Islands.

Type.—Catalogue No. 24059, United States National Museum. One female and two males received from C. F. Baker.

ICHNEUMONINÆ

Ephialtes porthetriae (Viereck).

Pimpla (*Pimpla*) *porthetriae* Viereck, Proc. U. S. Nat. Mus. 40 (1911) 480.

Ephialtes formosana sp. nov.

In Morley's key to *Pimpla*[11] this new species runs to *P. appolyon* Morley, agreeing with all of the key characters and differing from the description on page 165 only in having the frons vaguely sculptured and medially canaliculate; palpi entirely flavous; tegulæ, mesothoracic spiracular sclerite, and a spot on scutellum white; propodeal spiracles very long, slitlike; all tergites narrowly white at apex; fifth tergite basally nearly as strongly punctate as fourth, others alutaceous, progressively more shining; front coxæ entirely, middle coxæ largely, and both trochanters white; stigma black, extreme base and metacarpus pale; areolet briefly petiolate, oblique.

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[11] Fauna Brit. India, Hym. 3 (1913) 152.

It is also closely related to the Japanese *Ephialtes porthetriae* (Viereck), but that species, described only in the male, has the hind legs entirely (except extreme base of femur and apex of trochanter) and the front and middle coxæ and trochanters black, and differs also in structure and sculpture.

Female.—Length, 19 millimeters; antennæ, 15; ovipositor, 4.5. Temples very strongly receding; frons deeply concave, medially canaliculate, obsoletely punctate; face broader at clypeal foveæ than at antennæ, densely punctate, obliquely striately so above, less densely so at sides, with a median polished ridge, swollen above clypeal foveæ; clypeus coarsely punctate at base, polished and impressed in its apical two-thirds, apex subtruncate, the margin foveolate; malar space slightly more than half as long as basal width of mandible; eyes broadly emarginate opposite frons; ocelli large, diameter of a lateral ocellus nearly twice as long as ocellocular line and distinctly longer than postocellar line; antennæ slender filiform, first flagellar joint eight or more times as long as thick and a half longer than second; mesoscutum subpolished, obsoletely punctate, notauli practically wanting; scutellum flattened above, ridged laterally, polished; mesopleurum coarsely, subobsoletely punctate; metapleurum obliquely striate; propodeum transversely irregularly striate, polished behind, strongly ridged laterally, without carinæ, spiracle slit-like; abdomen very densely opaquely punctate; alutaceous at apex, each tergite with a narrow polished margin; first tergite without dorsal carinæ but with two low rounded elevations at summit; tergites 2 to 4 with decreasingly distinct subapical impressions and lateral elevations.

Black, with palpi, tegulæ, spiracular sclerite, spot on scutellum, front coxæ, middle coxæ at apex, and their trochanters whitish; front and middle legs otherwise stramineous, except base of middle coxa which is black; hind legs black with a broad whitish annulus on tibia; wings yellowish hyaline; abdomen with apices of tergites pale.

Host.—*Metanastria punctata* Walker.

Type locality.—Formosa.

Type.—Catalogue No. 24060, United States National Museum. One female reared from the host pupa by T. Shiraki.

Genus **LEPTOBATOPSIS** Ashmead

Because of the unretracted hypopygium Ashmead described this genus in the Acoentini. The genotype, *Leptobatopsis australiensis* Ashmead, is from Australia. Ashmead subsequently redescribed it from the Philippine Islands, referring it to the lissonotine genus *Atropha* Kriechbaumer and calling it *Atropha clypearia*. *Atropha* is unknown to me except by description, but it is very closely allied to *Leptobatopsis* and possibly should include the latter genus as a synonym.

In 1913 [12] and again in 1915 [13] Morley referred several Indian species to *Syzeuctus* Foerster. One of these is *Cryptus indicus* Cameron, with which Morley synonymized *Mesoleptus annulipes* Cameron and *Tanera annulipes* Cameron. With Cameron's three descriptions *Leptobatopsis australiensis* agrees very closely, except with the sculpture of the thorax and the maculation of the mesoscutum in *Tanera annulipes*. Morley's synonymizing of the latter species with *C. indicus*, however, indicates that these differences do not exist, and I would certainly synonymize *L. australiensis* with *C. indicus* Cameron were it not for the fact that Morley states that the spiracle of the first tergite is slightly before the middle, while in *L. australiensis* it is distinctly though slightly behind the middle. Moreover, the first tergite is distinctly petiolate, which is not true of any of the species of *Syzeuctus* known to me. It may be that species intermediate in this character occur in the Indian fauna, but for the present it seems wise to retain Ashmead's name. The petiolate abdomen gives this species an appearance strongly resembling the Campoplegini, to which tribe I believe the Lissonotini are much more closely related than to the Ichneumonini (Pimplini).

Leptobatopsis australiensis Ashmead.

Leptobatopsis australiensis ASHMEAD, Proc. U. S. Nat. Mus. 23 (1900) 47; Proc. Linn. Soc. N. S. Wales, pt. 3 (1900) 349.
Atropha clypearia ASHMEAD, Proc. U. S. Nat. Mus. 28 (1904) 143.

Additional specimens from Singapore of this widely distributed species indicate that it probably occurs throughout the Oriental and Australian Regions. The principal variation aside from size is in the presence or absence of certain of the white spots on the head and thorax. The spots on the sides of the face, the one in the malar space, and those on the humeral angle of the pronotum and tegula are sometimes wanting, while the extent of white on the abdomen is variable, that on the apical tergites being sometimes absent.

Unless *Syzeuctus indicus* (Cameron) is the male of this species, that sex has not been described. It differs from the female principally in having the clypeus entirely and the face largely white, the flagellum pale ferruginous beneath, and the fourth tergite, as well as the first to third, white at base and apex.

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[12] Fauna Brit. India, Hym. 3 (1913) 234–240.
[13] Ann. & Mag. Nat. Hist. VIII 16 (1915) 337.

OPHIONINÆ

Zacharops narangae sp. nov.

The only way in which *Zacharops* as described by Viereck differs from *Charops* is in its lack of the mesosternal processes between the hind coxæ. The genotype also differs from that of *Charops* in having the scutellum concave between the lateral carinæ, the head thinner and more nearly lenticular, and the eyes more sharply emarginate. In all of these characters the present new species agrees with *Zacharops;* while it agrees better with *Charops* in the lack of complete propodeal areas and mesopleural impression and the form of the abdomen, especially of the first tergite, which is less slender with the postpetiole more bulbous than in *Zacharops annulipes* (Ashmead).

Female.—Length, 9 millimeters; antennæ, 6; front wing, 5. Head set very close to thorax, strongly lenticular, vertex and temples very strongly receding, opaque-punctate and, with the thorax, densely silvery pilose; face slightly narrower below than at antennæ; malar space half as long as basal width of mandible; ocellocular line more than half as long as diameter of lateral ocellus; thorax in both dorsal and lateral views short-ovoid, the propodeum very precipitous from base; pronotum rugose; mesoscutum very densely punctate, more coarsely so in the positions of the absent notauli; scutellum opaque-punctate, very densely pilose, slightly concave; mesopleurum reticulate-rugose, convex throughout, without impression; metapleurum divided longitudinally by an auxiliary carina, below which it is reticulate-punctate and above which it is transversely rugose; propodeum laterally transversely rugose, medially reticulate, the lateral and basal carinæ obsolete, others absent; abdomen slender; first tergite curved upward, postpetiole strongly bulbous, more than half as long as the slender petiole, without carinæ; second tergite slightly compressed for its entire length and with a small impression on each side at about the middle (this is common to the genotypes of both *Charops* and *Zacharops*); the spiracles slightly before apical fourth; tergites 3 to 5 subequal, little more than half as long as second, each deeper than the one preceding, sixth shorter and deeper than fifth, others very small; ovipositor barely exserted; entire abdomen beyond first tergite densely clothed with short, appressed pubescence.

Head and thorax black, abdomen largely ferruginous; scape and pedicel below, mandibles, palpi, front and middle legs, hind trochanters, tegulæ, and wing bases whitish; flagellum fuscous, more reddish toward tip; hind coxæ black basally, reddish at apex; hind femur testaceous, tibia stramineous with subbasal and apical infuscation, tarsus fuscous, calcaria white; wings hyaline, venation brown; petiole stramineous; second tergite medially and narrowly at apex blackish; a narrow line near lateral margins of second and third tergites also black.

Male.—Like female in size, sculpture, and structure, and differing practically only in having the abdomen black at apex.

Host.—*Naranga aenescens* Moore.

Type locality.—Formosa.

Type.—Catalogue No. 24061, United States National Museum.

A female and a male reared from the host larva by T. Shiraki. The cocoon from which the male emerged is on the pin. It is 6 by 2.5 millimeters, cylindric-ovate with a suspension thread at the caudal end. It is dirty white with the caudal end and a row of spots near each end black.

Hyposoter flavus sp. nov.

In spite of the indistinctly areolated propodeum and the very small, occasionally absent areolet, there is apparently no real reason for erecting a new genus for this species. In fact, the most striking difference to be noted is the nearly uniform pale yellow color of the head and thorax.

Female.—Length, 10 millimeters; antennæ, 7. Head from above very thin, the temples nearly flat and sharply sloping; face densely punctate, nearly flat; frons coriaceous, with a median carina from anterior ocellus to between antennal foramina; eyes large, concavely curved within; ocellocular line about half as long as diameter of a posterior ocellus, postocellar line slightly longer; malar space hardly half as long as basal width of mandible; thorax largely closely punctate; pronotum striate laterally; upper hind portion of mesopleurum polished, with a few short striæ in front of the polished area; mesopleural furrow foveolate; notauli weakly and broadly impressed anteriorly; scutellum strongly convex, sloping to apex; propodeum medially impressed, the carinæ usually distinct in the genus more or less indicated, especially the basal transverse and the apical abscissa of the lateral and pleural carinæ; spiracle elongate-oval, small; legs slender, longer hind calcarium reaching more than three-fourths of the way to apex of basitarsus; areolet very small with a very long pedicel; nervulus postfurcal by nearly half its length; discocubitus curved, without a ramellus; nervellus nearly straight, unbroken, perpendicular; abdomen rather strongly compressed; spiracles of first tergite at apical third; ovipositor exserted about half the length of first tergite.

Flavous; a spot on vertex running down onto occiput and embracing ocelli, median, lateral, and posterior spots on mesoscutum, and a small spot on each side of propodeum at base blackish; flagellum blackish; legs flavous, hind tarsus and tibia at apices and articulation between hind femur and tibia blackish; wings hyaline; abdomen darker than thorax, especially toward apex.

Male.—Differs from female principally in having the malar space distinctly more than half as long as basal width of mandible and blackish spots on outside of hind coxa and trochanter.

Type locality.—Mount Limay, Luzon, Philippine Islands.

Other locality.—Manila, Philippine Islands.

Type.—Catalogue No. 24062, United States National Museum.

Two females and one male from the type locality collected by C. F. Baker, and one female from Manila collected by the Rev. Robert Brown. The Manila specimen lacks the black spots on the propodeum and the areolet in one wing, and is somewhat smaller.

ILLUSTRATIONS

PLATE 1

Apophysius bakeri sp. nov.; male. From a photograph by Herbert S. Barber.

TEXT FIGURES

FIG. 1. *Ctenocharidea luzonensis* sp. nov.; *a*, thorax and base of abdomen, lateral view; *b*, portion of thorax, propodeum, and base of abdomen, dorsal view; *c*, wings; *d*, claw of hind tarsus.

2. *Pycnopyge bella* sp. nov., female; *a*, entire insect; *b*, head, front view; *c*, thorax, lateral view; *d*, first abdominal segment, lateral view; *e*, apex of abdomen, lateral view.

3. *Nesostenodontus bakeri* sp. nov., female; *a*, dorsal view; *b*, head, lateral view; *c*, clypeus and mandibles; *d*, first tergite, lateral view.

4. *Idiognathus balteatus* sp. nov.; *a*, head, dorsal view; *b*, head, lateral view; *c*, clypeus and mandibles; *d*, propodeum; *e*, first abdominal segment, lateral view; *f*, first abdominal segment, dorsal view; *g*, second tergite, dorsal view.

5. *Elasmognathias albitarsis* sp. nov., head; *a*, ventrocephalic view; *b*, lateral view.

6. *Earrana malayensis* sp. nov.; *a*, dorsal view; *b*, head, front view; *c*, thorax, anterior portion, lateral view to show prescutum, *psct*, and epomia, *ep*.

7. *Esuchonematopodius luzonensis* sp. nov.; *a*, head, front view; *b*, venation in areolar region; *rad*, radius; *cub*, cubitus; *rec*, recurrent; *c*, thorax, lateral view.

8. *Apophysius bakeri* sp. nov.; *a*, head, front view; *b*, propodeum, lateral view; *c*, propodeum, dorsal view.

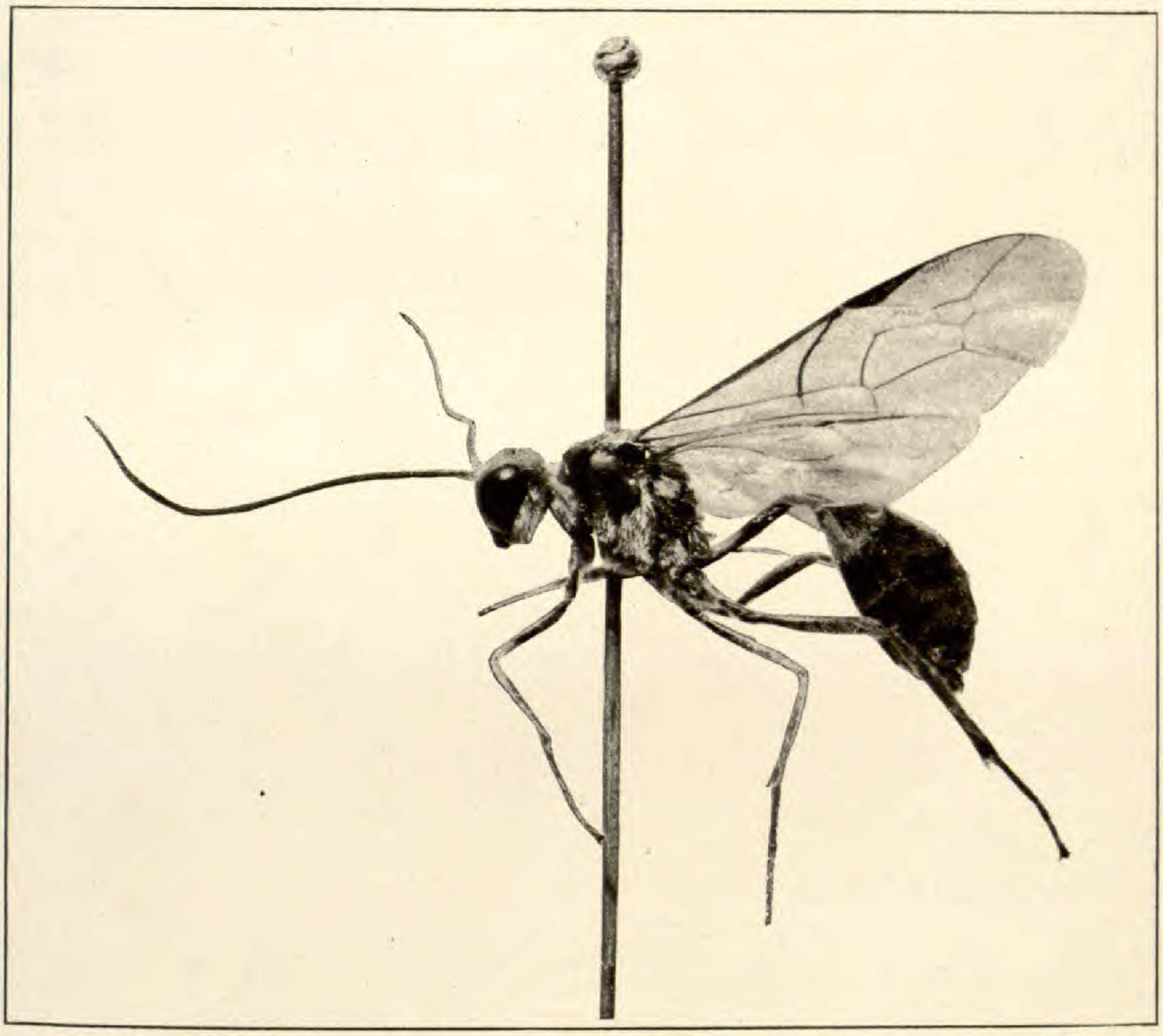

PLATE 1. APOPHYSIUS BAKERI SP. NOV., MALE.